

C
AuIH
1893/94-1894/95

(128)

ALABAMA POLYTECHNIC INSTITUTE.

AUBURN

Agricultural and Mechanical College,

189³~~4~~-95

Earning and Labor.

LIBRARY

OF THE

University of Illinois.

CLASS.

BOOK.

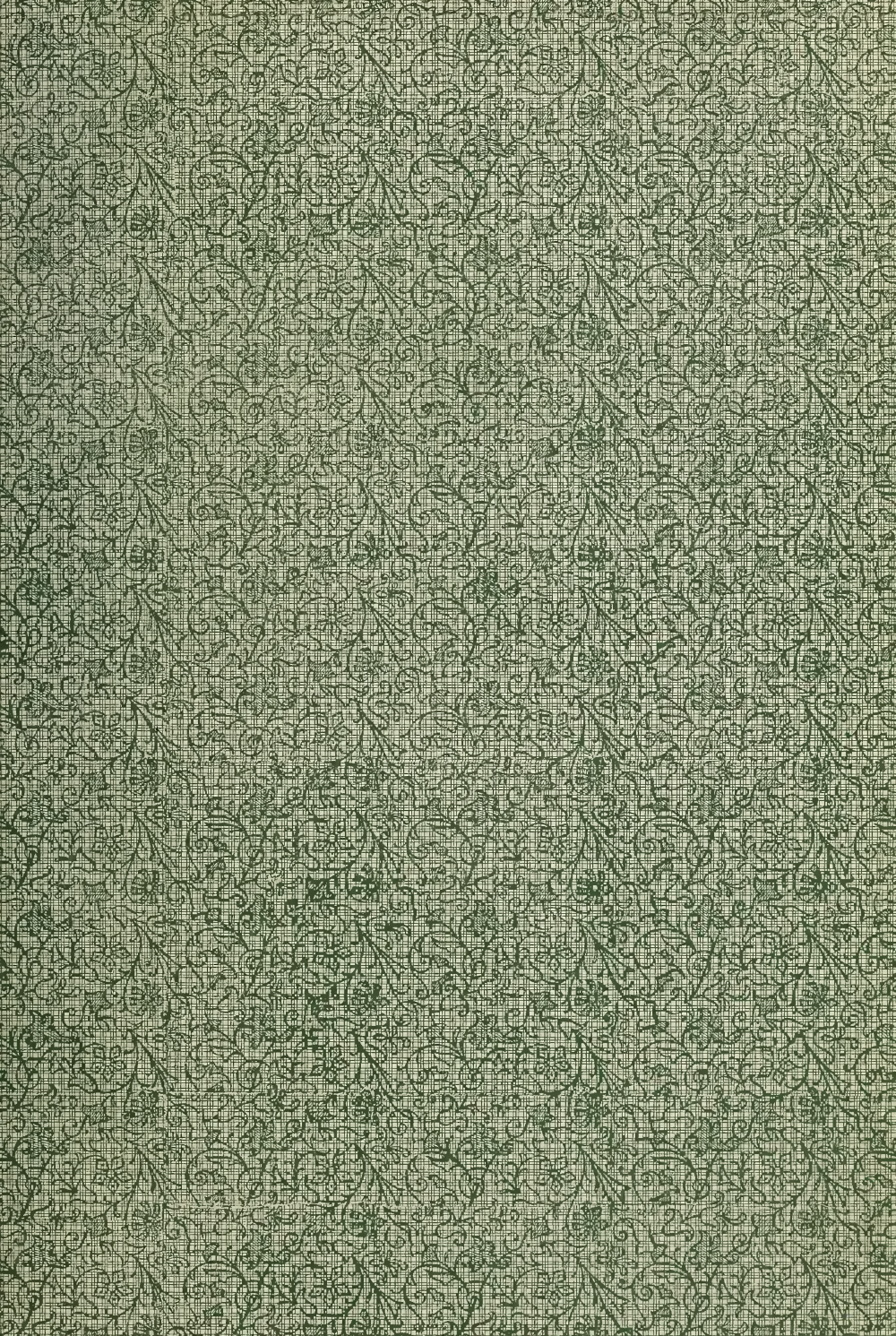
VOLUME.

C

AulH

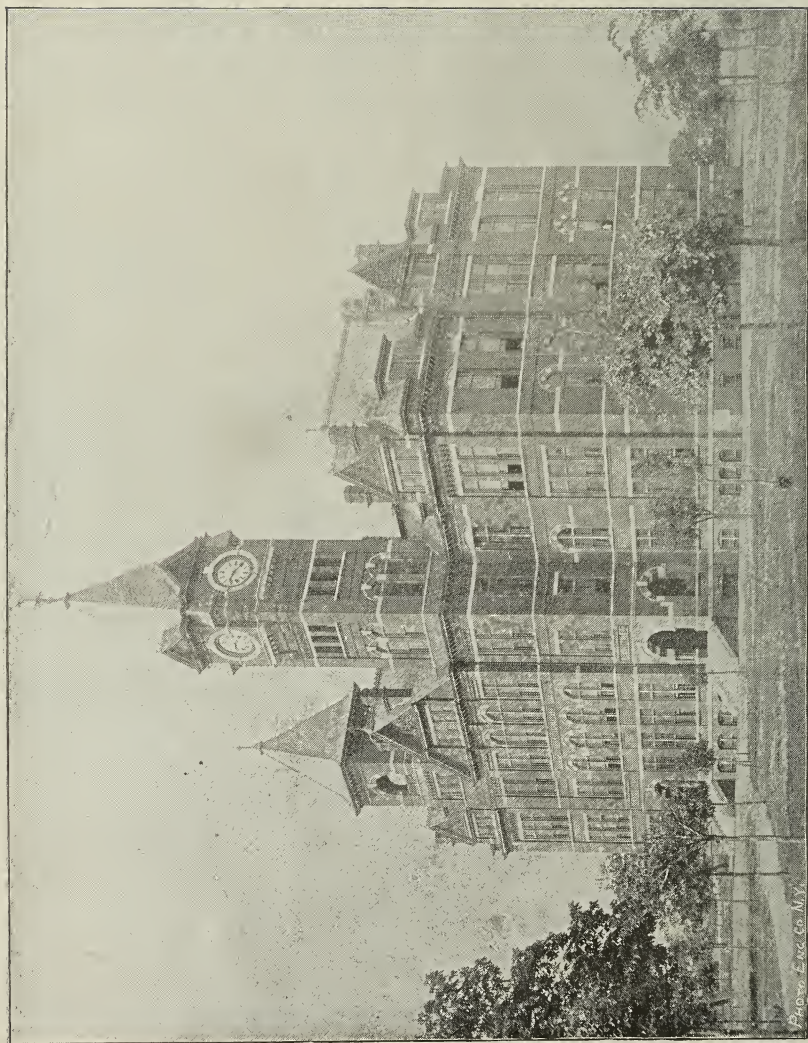
1893/94-1894/95

Accession No.





Digitized by the Internet Archive
in 2012 with funding from
University of Illinois Urbana-Champaign



ALABAMA POLYTECHNIC INSTITUTE.

Photo. Eng. Co. N.Y.

128
813
60
273
7018

CATALOGUE

OF THE

Alabama Polytechnic Institute.



STATE

AGRICULTURAL AND MECHANICAL

COLLEGE.

1893-94.

AUBURN, ALABAMA.



MONTGOMERY, ALA.:

THE BROWN PRINTING CO., STATE PRINTERS AND BINDERS.

1894.

TRUSTEES.

His Excellency, THOMAS G. JONES, President. Ex-Officio.
J. G. HARRIS, Superintendent of Education. Ex-Officio.

I. F. CULVER. (term expires 1899). Union Springs.
J. C. RICH. (term expires 1899). Mobile.
H. CLAY ARMSTRONG. (term expires 1899). Auburn.
R. H. DUGGAR. (term expires 1899). Gallion.

J. G. GILCHRIST. (term expires 1897). Hope Hull.
WM. SMAW. (term expires 1897). Boligee.
C. C. HARRIS. (term expires 1897). Decatur.

JONATHAN HARALSON. (term expires 1895). Selma.
R. F. LIGON. (term expires 1895). Tuskegee.
J. A. BILBRO. (term expires 1895). Gadsden.

E. T. GLENN, Treasurer.

Auth
1893/94 - 1914/15

FACULTY AND OFFICERS.

WM. LEROY BROUN, M. A., LL. D.,
President and Professor of Physics and Astronomy.

OTIS D. SMITH, A. M.,
Professor of Mathematics.

P. H. MELL, M. E., PH. D.,
Professor of Botany and Geology.

JAMES H. LANE, C. E., A. M., LL. D.,
Professor of Civil Engineering and Drawing.

CHARLES C. THACH, A. M.,
Professor of English and Political Economy.

GEORGE PETRIE, M. A., PH. D.,
Professor of History and Latin.

LIEUT. J. H. WILLS, 22nd Infantry, U. S. A. (West Point),
Commandant and Professor of Military Science.

A. J. BONDURANT, A. M.,
Professor of Agriculture.

A. F. MCKISSICK, A. M.,
Professor of Electrical Engineering.

J. M. STEDMAN, B. S.,
Professor of Biology.

B. B. ROSS, M. Sc.,
Professor of General and Agricultural Chemistry and State Chemist.

CHARLES H. ROSS, C. E., PH. D.,
Adjunct Professor of Modern Languages and English.

J. J. WILMORE, M. E.,
Professor of Mechanical Engineering and Director of Laboratory.

C. A. CARY, B. Sc., D. V. M.,
Professor of Physiology and Veterinary Science.

B. H. CRENSHAW, M. E.,

Instructor in Mechanic Arts.

A. ST. C. DUNSTAN, M. E., C. E.,

Instructor in Physics.

R. E. NOBLE, M. Sc.,

Instructor in Chemical Laboratory.

R. J. TRAMMELL, C. E.,

Assistant Instructor in Mechanic Arts.

L. W. PAYNE, M. Sc.,

Assistant Librarian and Secretary.

R. L. BIVINS, B. Sc. Assistant in Botany.

M. R. BURTON, B. Sc. Assistant in Civil Engineering.

C. W. DAUGETTE, B. Sc. Assistant in Agriculture.

J. H. HOLT, B. Sc. Assistant in Mechanic Arts.

T. L. KENNEDY, B. Sc. Assistant in Mathematics.

N. B. MARKS, B. Sc. Assistant in Library.

H. K. MILLER, B. Sc. Assistant in Chemistry.

A. L. QUAINANCE, B. A. Sc. Assistant in Biology.

W. M. RIGGS, B. Sc. Assistant in English.

J. F. WEBB, B. Sc. Assistant in English and Mathematics.

J. H. DRAKE, M. D. Surgeon.

C. C. THACH. Librarian and Recording Secretary.

O. D. SMITH. Corresponding Secretary.

OFFICERS

OF THE

AGRICULTURAL EXPERIMENT STATION.

BOARD OF VISITORS.

COMMITTEE OF TRUSTEES ON EXPERIMENT STATION.

I. F. CULVER.....	Union Springs.
J. G. GILCHRIST.....	Hope Hull.
H. CLAY ARMSTRONG.....	Auburn.

BOARD OF DIRECTION.

WM. LEROY BROWN.....	President.
A. J. BONDURANT.....	Agriculturist.
B. B. ROSS.....	Chemist.
P. H. MELL.....	Botanist.
J. M. STEDMAN.....	Biologist.
C. A. CARY.....	Veterinarian.

ASSISTANTS.

J. T. ANDERSON, PH. D.....	First Assistant Chemist.
R. E. NOBLE, M. SC.....	Second Assistant Chemist.
C. L. HARE, M. SC.....	Third Assistant Chemist.
R. L. BIVINS, B. SC.....	Station Sec'y, and Assistant Botanist.
T. U. CULVER.....	Superintendent of Farm.
W. B. FRAZER.....	Farm Clerk.

STATES AGRICULTURAL MECHANICAL COLLEGE **OF THE** **AGRICULTURAL EXPERIMENT STATION**

ALABAMA

ENGINEERING DEPT.

AUBURN, ALA.

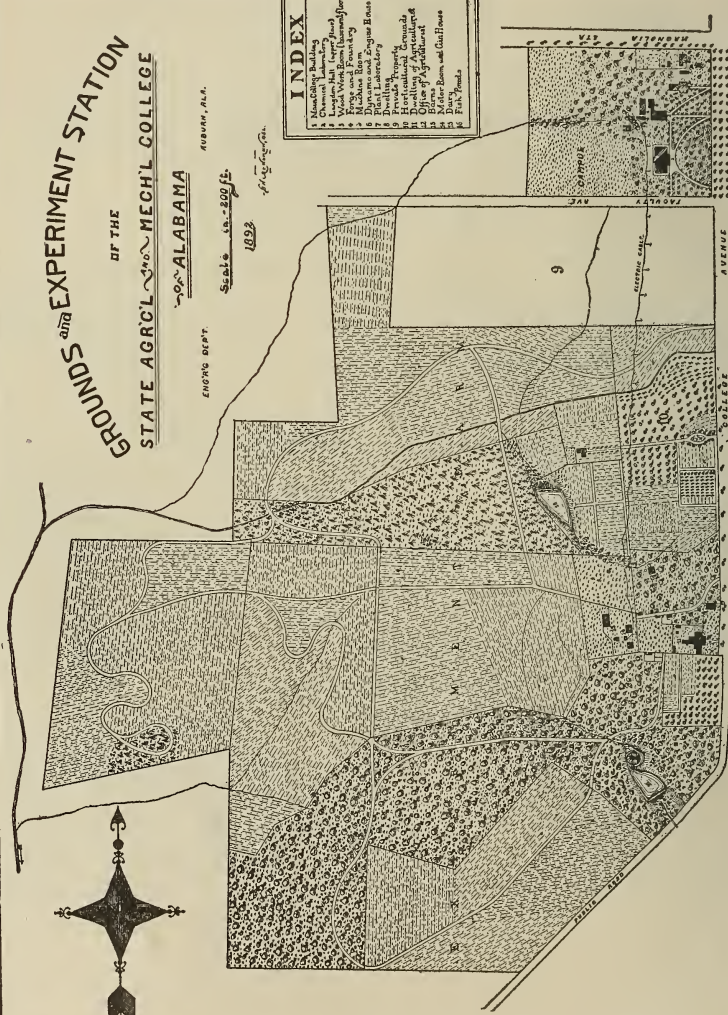
Scale 1 in. = 200 ft.

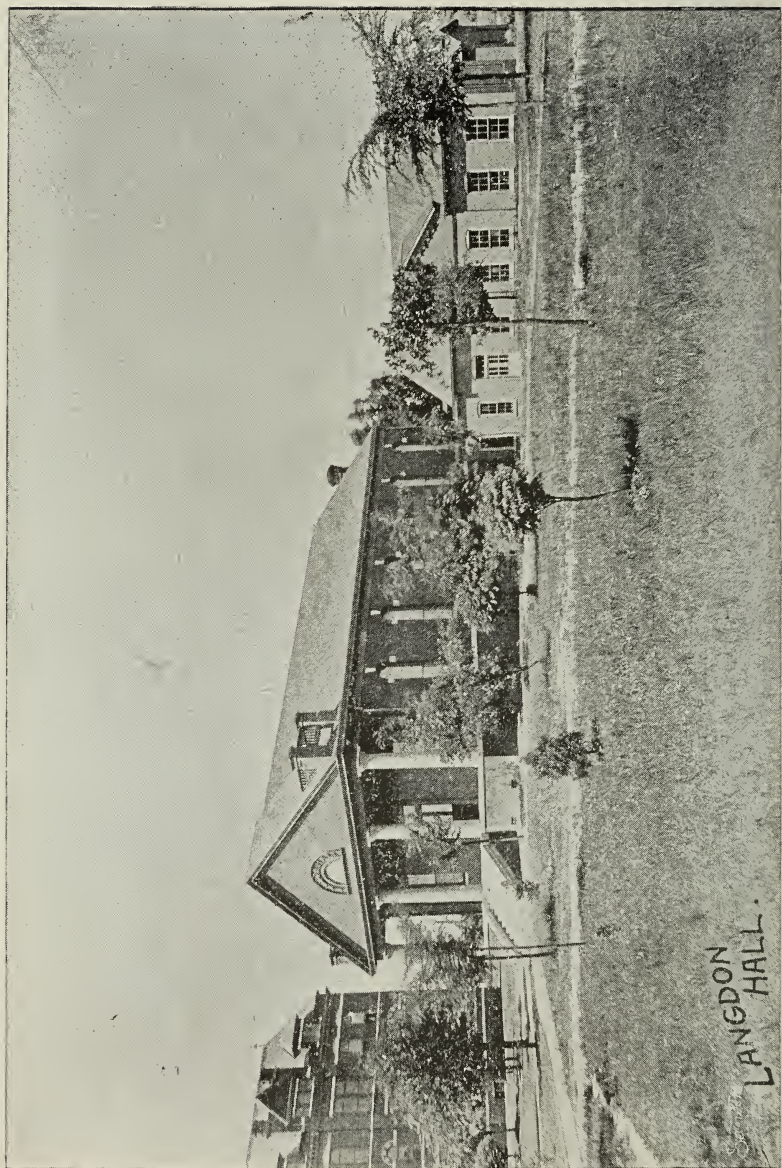
1892

W. H. H. H. H.

INDEX

- 1 Main Office Building
- 2 Lecture Hall (upper part)
- 3 Lecture Hall (lower part)
- 4 Fire and Foundry
- 5 Machine Shop
- 6 Blacksmith Shop
- 7 Plant Laboratory
- 8 Power House
- 9 Agricultural Grounds
- 10 Horticultural Grounds
- 11 Office of Agricultural
- 12 Farm
- 13 Barn and Out House
- 14 Dairy
- 15 Fish Ponds





LANGDON
HALL.

OBJECT OF THE COLLEGE.

The leading object of the College, in conformity with the act of Congress and the acts of the State Legislature, is to teach the principles and the applications of science.

In its course of instruction it gives prominence to the sciences and their applications, especially to those that relate to agriculture and the mechanic arts; and at the same time the discipline obtained by the study of languages and other sciences is not neglected.

All students are required to study the English language. The Latin, French and German languages are also taught, and opportunity for their study is offered to students in any course.

The special or technical instruction given is thus based on a sound, general education.

The College, in fact, is a distinctive school of industrial science—or POLYTECHNIC INSTITUTE—a title which by resolution of the Trustees is permitted to be inscribed on the catalogue,—and work of great value to the youth of the State is now being accomplished by fitting them by a thorough science-discipline, in which manual training in the lower classes is made a prominent feature, for the successful and honorable performance of the responsible duties of life.

While every attention is given to the mental discipline of the students in endeavoring to train them to habits of accurate scientific thought, and thus to qualify them for the duties of life, their moral and Christian training will always constitute the prominent care and thought of the Faculty.

LABORATORIES AND FACILITIES FOR INSTRUCTION.

The College now possesses facilities for giving laboratory instruction in applied science in the following departments:

I.—IN AGRICULTURE AND HORTICULTURE.

The farm contains 226 acres and is supplied with illustrative specimens of stock of select varieties.

The agricultural experiment station, established in connection with the College, where experiments and scientific investigations relating to agriculture are daily made, affords unusual opportunities to students to become familiar with agriculture, its defects and remedies.

The students of agriculture accompany the professor in the field, garden, conservatory, stock-yard, etc., where lectures are delivered in the presence of the objects discussed, and during the year exercises in practical agriculture of an educational character are given the students who enter upon this course of study.

II.—IN MECHANIC ARTS.

The laboratory of mechanic arts is used as an auxiliary in industrial education, as a school in manual training in the arts that constitute the foundation of various industrial pursuits. The work performed by the students is *instructive* in character, as in any other laboratory, and the classes are taught in sections by a series of graded lessons under the supervision of the professor. In the lower classes of the College each student enters this school, and is assigned three exercises a week, each exercise being two hours long.

The object of this laboratory is not to teach a trade, but to educate, to discipline and train the eye and the hand, as well as the mind, and thus by associating manual and mental training, to educate thoroughly the student for the

duties of life, whatever his vocation may be. There is no attempt to teach students special skill in constructing articles of commercial value, but all the exercises are systematically arranged and designed for purposes of education.

The wood department is located in a commodious hall, 90 x 50 feet, and is provided with a twenty-five horse-power Corliss engine, a planer, circular saw, hand-saw, two scroll saws, a buzz planer, twenty-four stands each with a lathe and a full set of tools, and thirty benches for carpenter work with the tools requisite for construction.

A brick building, 30 x 87 feet with two rooms, has been constructed especially for instruction in working iron.

One room is equipped with sixteen forges and tools required for a forge department, and the other with a cupola furnace, having a capacity of 1000 pounds per hour, a core oven, a brass furnace, moulding benches, a 2000-pound hoist, and special tools for use in a foundry.

The forge and foundry rooms are furnished with a Sturtevant fan and exhauster, supplied with power from a ten horse-power engine, constructed by the students in mechanic arts.

The machine department occupies a brick building, 30 x 50 feet, and is equipped with ten engine lathes, one speed lathe, one 20-inch drill press, one 10-inch sensitive drill, one post drill, one 16-inch shaper, one 5-foot planer, one universal milling machine, a corundum tool grinder, a small emery grinder, a universal cutter and reamer grinder, a No. 1 Brown & Sharpe universal grinding machine, and a power hack saw.

The chipping and filing department is arranged with benches, vises and tools for twelve students.

The tool room is well supplied with special tools for use in instruction, including a machine for grinding twist drills. The rooms are lighted with electricity whenever necessary.

III.—IN PRACTICAL CHEMISTRY.

The chemical laboratory is supplied with modern apparatus, and in its equipment affords excellent facilities for instruction in practical chemistry and for investigation.

The investigations that are undertaken in this laboratory by scientific experts, in connection with the work of the agricultural experiment station, are of especial value to advanced students, and afford them unusual opportunities to learn the methods of scientific research. The building contains a large general laboratory that will accommodate sixty students, a lecture room with capacity for one hundred seats, and nine other rooms, all appropriated to instruction and research in chemistry.

IV.—IN ELECTRICAL ENGINEERING.

The electrical laboratory is well supplied with modern appliances for instruction in electrical engineering. It occupies two large rooms in the basement, and is equipped with many fine instruments of precision: Kelvin deka-ampere balance, Kelvin graded current and potential galvanometers, Cardew voltmeter, Weston voltmeters and ammeter, Queen's magnetic vane voltmeter and ammeter, Thomson watt-meter, Hartman and Braun voltmeter, Kohlrausch ammeter, Wood ammeter, and many other current-measuring instruments, resistance boxes, Wheatstone bridges, condensers, telephones, batteries, magnets, etc.

The dynamos occupy a separate building and are operated by a twenty-five horse-power Atlas engine, and a thirty-five horse-power Westinghouse engine. In this building are installed the following dynamos:

Edison compound 12 kilo-watt generator, Thomson-Houston 150 light 110 volt dynamo, Weston 150 volt 25 ampere dynamo, Crocker-Wheeler one horse-power motor, Brush six arc-light dynamo with lamps, two-phase alternator and 500 volt 20 ampere generator made by students. There is also in connection with this department a ten horse-power

motor (made by students) at the experiment station one thousand yards from the College, which is operated by the 500 volt generator in the dynamo room.

V.—IN PHYSICS.

In the College building provision is made for laboratory work in the department of physics. Special rooms in the basement are appropriated for this purpose, and are equipped with the necessary appliances for instruction in practical physics.

VI.—IN MINERALOGY.

This laboratory occupies a convenient room in the basement, and is provided with tables and appliances to accommodate thirty students, with an excellent collection of minerals.

VII.—IN BOTANY.

In the work of the agricultural experiment station there is a botanical garden under the charge of the professor of botany, investigations in botany are given special attention, and opportunities are offered advanced students for practical work in a laboratory especially fitted with microscopes, tables, a dark room for photographic work, and appliances needed for instruction and research. This department is provided with Auzoux's elastic models of seeds and flowers for teaching botany.

VIII.—IN BIOLOGY.

The laboratory in this department adjoins the lecture room of the professor, and is furnished with tables, excellent microscopes and appliances for investigation. Each student of the class works under the supervision of the professor.

IX.—IN ENGINEERING AND SURVEYING.

The necessary apparatus for field work, including transits, levels, plane table, models of bridges, etc., is provided for the use of the students, and the customary exercises in the field are given.

X.—IN DRAWING.

All the students in the lower classes are required to take drawing, a study which tends to discipline the mind, as well as to train the eye and hand to accuracy of observation and execution. A large, well-lighted drawing room, that will accommodate fifty students, is provided with tables, lock boxes, etc.

XI.—IN PHYSIOLOGY AND VETERINARY SCIENCE.

Recently there has been constructed for the veterinary laboratory a new and separate two-story building with nine rooms. It is provided with lecture room, office, working and operating rooms for clinical practice, and museum with skeletons of the domestic animals for instruction. Free clinics are given every Saturday for the benefit of the students in veterinary science.

MILITARY TACTICS.

Instruction in this department is given in conformity with the act of Congress. Students receive the benefit of regular military drill, and in addition the military system is used as a means of enforcing discipline and securing good order, promptness and regularity in the performance of academic duties.

This department is under the charge of Lieut. J. H. Wills, 22nd Infantry, U. S. A.

It is supplied with new cadet muskets and accoutrements for the corps, and for artillery practice, with two three-inch rifle guns, carriages and limbers.



CHEMICAL LABORATORY.

COLLEGE BUILDINGS.

The frontispiece is a representation of the main College building. It is 160 by 71 feet, and contains forty-five rooms. This building is not used for dormitories for students, but is appropriated to purposes of instruction and investigation.

It contains the lecture rooms and offices of the professors, laboratories, library, museum, armory, etc.

LANGDON HALL.

This is a two-story building, ninety by fifty feet. The second story is the audience hall, used for commencement and other public occasions.

The first story is appropriated to the laboratory of mechanic arts.

THE CHEMICAL LABORATORY,

As shown on the opposite page, is a handsome two-story structure, 40 by 60 feet, with a rear projection, 35 by 60 feet, of one-story and basement, and contains eight rooms. The exterior is of pressed brick, with cut stone trimmings and terra-cotta ornamentation.

In the basement are ample accommodations for assaying and storage.

The main laboratory will accommodate sixty students, and contains improved working tables, with water, gas and every necessary appliance for chemical work.

The second story contains a lecture room and room for gas analysis. Around this lecture room are cases containing crude and manufactured products, illustrating the subjects of agricultural and industrial chemistry, which are prominent subjects taught in this institution.

GRADUATES IN 1893.

CLASS OF 1893.

HONOR GRADUATES.

COURSE IN CHEMISTRY AND AGRICULTURE.

Robert Lee Bivins.....Lee.

COURSE IN CIVIL ENGINEERING.

Thomas Litchfield Kennedy.....Lee.

COURSE IN ELECTRICAL AND MECHANICAL ENGINEERING.

Walter Merritt Riggs.....South Carolina.

GENERAL COURSE.

Joel Franklin Webb.....Coosa.

BACHELOR OF SCIENCE.

Lee Ashcraft.....Lauderdale.

Wallace Reverdy Bishop.....Talladega.

Robert Lee Bivins.....Lee.

Francis Marshall Boykin.....Montgomery.

Massey Robart Burton.....Lee.

Walter Scott Crump.....St. Clair.

Clarence William Daugette.....Lee.

Joel Dumas.....Wilcox.

Daniel B. Edwards.....Dallas.

Thomas Gardner Foster.....Montgomery.

John Henry Holt.....Georgia.

Thomas Litchfield Kennedy.....Lee.

James Monroe Little.....Lee.

James Berry Loveless.....Marshall.

Nicholas Barnett Marks.....Kentucky.

Edward Baker Mell.....Georgia.

Hamilton Knox Miller.....Talladega.

Walter Merritt Riggs.....South Carolina.

John Shelton Robinson.....Jefferson.

Charles Henry Smith.....	Georgia.
Henry Hamilton Smith.....	Montgomery.
Linton Sparks Smith.....	Georgia.
Sheldon Lynn Toomer.....	Lee.
Joel Franklin Webb.....	Coosa.
Thomas Felton Wimberly.....	Lee.

MASTER OF SCIENCE.

Raleigh Frederick Hare.....	Lee.
Louis Philip Heyman	Georgia.
Leonidas Warren Payne.....	Lee.
Walter Evan Richards.....	Chambers.
Edward Broadus Smith.....	Lee.

CIVIL ENGINEER.

Charles Allen Brown.....	Sumter.
George Samuel Clark.....	Montgomery.
Robert Jefferson Trammell.....	Lee.

MINING ENGINEER.

William Francis Feagin.....	Barbour.
-----------------------------	----------

ELECTRICAL AND MECHANICAL ENGINEER.

Frank McLemore Moseley.....	Montgomery.
-----------------------------	-------------

DISTINGUISHED STUDENTS

AWARDED CERTIFICATES IN 1893.

Students who receive a grade above 90 in three studies in the Freshman Class, in four in the Sophomore, in five in the Junior, and in six in the Senior, are distinguished for excellence in scholarship, and are awarded

HONOR CERTIFICATES.

The following students received honor certificates in 1893:

SENIOR CLASS.

Robert Lee Bivins.....	Lee.
Massey Robart Burton.....	Lee.
Walter Scott Crump.....	St. Clair.
Clarence William Daugette.....	Lee.
Joel Dumas.....	Wilcox.
Daniel B. Edwards.....	Dallas.
John Henry Holt.....	Georgia.
Thomas Litchfield Kennedy.....	Lee.
James Monroe Little.....	Lee.
Nicholas Barnett Marks.....	Kentucky.
Edward Baker Mell.....	Georgia.
Hampton Knox Miller.....	Talladega.
Walter Merritt Riggs.....	South Carolina.
Charles Henry Smith.....	Georgia.
Margaret Kate Teague.....	Lee.
Joel Franklin Webb.....	Coosa.
Thomas Felton Wimberly.....	Lee.

HONOR STUDENTS IN JUNIOR CLASS.

COURSE IN CHEMISTRY AND AGRICULTURE.

Champe Seabury Andrews.....	Tennessee.
-----------------------------	------------

COURSE IN CIVIL ENGINEERING.

James Archibald Duncan.....	Pike.
-----------------------------	-------

COURSE IN ELECTRICAL AND MECHANICAL ENGINEERING.

Ogden Ellery Edwards.....Calhoun.

GENERAL COURSE.

Paul Pratt McKeown.....Florida.

JUNIOR CLASS.

Champe Seabury Andrews.....Tennessee.

Kate Conway Broun.....Lee.

Robert Park Clower.....Lee.

Charles Gordon Greene.....Lee.

Jesse Drewry Lane.....Randolph.

Willie Gertrude Little.....Lee.

William Washington Moore.....Blount.

Peter Preer.....Georgia.

SOPHOMORE CLASS.

Henry Clay Burr.....Georgia.

William Wallace Bussey.....Georgia.

James Claude Thomason.....Randolph.

FRESHMAN CLASS.

William James Beeson.....Etowah.

CATALOGUE OF STUDENTS.

FOR THE SESSION OF 1893-94.

GRADUATE STUDENTS.

[*Residence is Alabama when State is not named.*]

NAME.	RESIDENCE.
Leigh Stafford Boyd.....	Lee.
Frank Marshall Boykin.....	Montgomery.
Robert Lee Bivins.....	Lee.
Massey Robart Burton.....	Lee.
Clarence William Daugette.....	Lee.
James Buhrman Espy.....	Henry.
John Henry Holt.....	Georgia.
Thomas Litchfield Kennedy.....	Lee.
Nicholas Barnett Marks.....	Kentucky.
Hampton Knox Miller.....	Talladega.
Altie L. Quaintance.....	Florida.
Walter Merritt Riggs.....	South Carolina.
Henry Hamilton Smith.....	Montgomery.
Joel Franklin Webb.....	Coosa.

UNDERGRADUATE STUDENTS.

SENIOR CLASS.

George Smith Anderson.....	Lee.
Champe Seabury Andrews.....	Tennessee.
Kate Conway Broun.....	Lee.
James Vandiver Brown.....	Georgia.
John Morgan Burns.....	Dallas.
Greene Watley Carlisle.....	Lee.

William DeLamar Clayton	Lee.
Roseberry Covington Conner	Macon.
Palmer Payne Daugette	Lee.
Rufus Thomas Dorsey	Georgia.
Waverly Goode Duggar	Hale.
James Archibald Duncan	Pike.
Julius Confree Dunham	Montgomery.
Charles Dunlap	Madison.
James Dunlap	Madison.
Ogden Ellery Edwards	Calhoun.
Thomas Preston Flanagan	Lee.
Robert Cherry Foy	Barbour.
Frederic Almet Fulghum	Jefferson.
Charles Gordon Greene	Lee.
Crosland Clarence Hare	Lee.
Augustus J. Harris	Morgan.
Arthur William Holstun	Chambers.
Jesse Drewry Lane	Randolph.
Sydney Leach	Tuscaloosa.
Willie Gertrude Little	Lee.
Paul Pratt McKeown	Florida.
Herman Meislahn	Florida.
Lauriston Greene Moore	Lee.
Peyton Herndon Moore	Blount.
William Washington Moore	Blount.
Peter Preer	Georgia.
Samuel Arthur Redding	Georgia.
John Presley Slaton	Macon.
Margaret Kate Teague	Arkansas.
Jack Thorington	Montgomery.
Graham Golson Vaughan	Dallas.
Frank Atkinson Vernon	Chambers.
Rinaldo Greene Williams	Lee.
Arthur Zachariah Wright	Lee.

JUNIOR CLASS.

Robert Higgins Adams.....	Pike.
Daniel Spigener Anderson	Lee.
Walter Scott Askew	Chambers.
Hugh Bickerstaff.....	Russell.
George Perkins Bondurant.....	Lee.
Frank Asbury Boykin.....	Lee.
William Wallace Bussey,.....	Georgia.
Gordon Flewellen Chambers.....	Russell.
LeVert Coleman.....	Madison.
Solon Lycurgus Coleman.....	Perry.
William Wherton Fulghum.....	Jefferson.
Langdon Bowie Gammon.....	Georgia.
Benjamin Browning Haralson.....	Dallas.
George Oliver Janney.....	Montgomery.
Benjamin Glenn Jennings.....	Russell.
John Whitfield Kelly.....	Georgia.
Henry Hearst Kyser.....	Talladega.
Charles Linn.....	Jefferson.
James Neal McLean.....	Montgomery.
William Cunningham McMillan.....	Talladega.
James Newsom	Georgia.
Henry Hinds Peevey.....	Madison.
Tilden Hendricks Phipps.....	Georgia.
Walter Russell Shafer.....	Perry.
Harry Howell Smith.....	Lee.
Percy Hilton Smith.....	Georgia.
James Adger Smythe.....	South Carolina
Herbert Warren Taylor.....	Montgomery.
James Claude Thomason.....	Randolph.
Robert Edward Lee Weathers.....	Randolph.
Andrew Hearne Whitman.....	Lee.
Frank Lewis Whitman.....	Lee.
John Adams Wills	Lee.

SOPHOMORE CLASS.

Albert Lea Alexander.....	Georgia.
Charles Nutting Alford.....	Marshall.
Andrew Beirne Andrews.....	Tennessee.
John Bigham Barnett.....	Pike.
William James Beeson.....	Etowah.
John Simeon Bennett.....	Lee.
Sidney Josiah Bross.....	Coosa.
Joseph Quarterman Burton.....	Lee.
Henry Rozier Casey.....	Jefferson.
William Oliver Chears.....	Georgia.
Cyrus Henry Coleman.....	Lowndes.
Albert Bedell Clower.....	Lee.
James Washington Culver.....	Lee.
Walter Ernest Culver.....	Lee.
William Rozier Daughtry.....	Lee.
Oba DeVan Dumas.....	Wilcox.
Jesse B. Edwards.....	Talladega.
John Cuthbert Farley.....	Lee.
Clifton Henry Feagin.....	Barbour.
Robert Louis Gaines.....	Chambers.
Malcolm Luther Gillis.....	Georgia.
John Louis Glenn.....	Butler.
John Fletcher Heard.....	Lee.
Walter Erwin Henley.....	Jefferson.
Thomas Ismay Hewlett.....	Montgomery.
Charles Wadsworth Hill.....	Greene.
George Michael Holley.....	Georgia.
Robert Campbell Holley.....	South Carolina.
Daniel Thornton Hudmon.....	Lee.
Richard Sparks Jackson.....	Jefferson.
Arthur Daniel Johnson.....	Madison.
Claude Bertram Johnson.....	Georgia.
William Berrian Kelly.....	Georgia.
Charles Lee King.....	Georgia.
Garry Devon King.....	Georgia.
Samuel William Lane.....	Randolph.

William Henry Lawson.....	Montgomery.
Earle Foster Lee.....	Lee.
Fuller McLaren Longley.....	Georgia.
Hubert Johnston Magruder.....	Florida.
Francis Morrisette.....	Hale.
James Louis Molder.....	Georgia.
Julian Berry Oglesby.....	Georgia.
John Alvin Reeves.....	Montgomery.
Englehardt Gustave Rike.....	Montgomery.
Walter Marvin Ross.....	Lee.
Oliver John Semmes.....	Mobile.
William Henry Shanks.....	Butler.
Edward Baxter Sloss.....	Jefferson.
Douglas Taylor.....	Madison.
Reynolds Walker Tichenor.....	Georgia.
William Abner Tippin.....	Florida.
William Henry Harrison Trammell.....	Lee.
Richard Wilde Walker.....	Tennessee.
Augustus Robinson Wilkerson.....	Georgia.
William Martin Williams.....	Georgia.
Bryce Hewitt Wilson.....	Franklin.
Charles Wilson.....	Franklin.
Darwin Stearnes Wright.....	Georgia.

FRESHMAN CLASS.

Paul Otey Anderson.....	Lee.
William Kirk Armstrong.....	Lee.
Bayard McIntosh Atwood.....	Georgia.
George Doan Borup.....	Montgomery.
Walter Marion Carter.....	Montgomery.
Edgeworth Stephens Casey.....	Jefferson.
Alexander Humphreys Clark.....	Montgomery.
Peyton Graves Clark.....	Montgomery.
Benjamin Calloway Condon.....	Lee.
Thomas Ganaway Conner.....	Macon.
Alfred Morrison Davidson.....	Dallas.
Mortimer Varner DeBardeleben.....	Macon.

James Allen Durham	Jefferson.
Vincent Martin Elmore	Montgomery.
George Dudley Glass	Lee.
Charles Edwin Goulding	Florida.
Terry Tilden Greil	Montgomery.
Robert Justin Griffin	Georgia.
Jule Alford Haigler	Montgomery.
Terry Reese Hardaway	Montgomery.
Francis Williams Hare	Lee.
Fletcher Dumas Harvey	Russell.
Ernest William Heck	Illinois.
Harry Herzfeld	Tallapoosa.
Joseph Herzfeld	Tallapoosa.
Robert Edwin Lee Hudson	Lee.
Leslie Kilshaw Irwin	Mobile.
Edwin Bryce Joseph	Montgomery.
Leon Joseph	Jefferson.
Ray Knight	Calhoun.
William Jay Leinkauf	Mobile.
Warren Horton McBryde	Mobile.
William Jones McLeod	Coosa.
James Meager	Jefferson.
Wade Hampton Negus	Mississippi.
Charles Johnson Nelson	Dallas.
Samuel Noble	Calhoun.
LeRoy Elliot O'Neal	Madison.
William Clifford Paden	Etowah.
Foster Mitchell Payne	Lee.
William Henry Patterson	Georgia.
Nathan Snow Perkins	Calhoun.
James Robert Prince	Mississippi.
John Purifoy	Montgomery.
Adolph Philip Schweizer	Dallas.
Frank Duncan Scott	Montgomery.
Rufus George Shanks	Butler.
Frank Hartwell Thomas	Georgia.
Leonard Alvie Thomas	Lee.

Merrick Dowdell Thomas	Chambers.
Sidney Johnson Vann	DeKalb.
James Marvin Wallace	Elmore.
William Wren	Mobile.
George Wrigley	Georgia.

SPECIAL AND IRREGULAR STUDENTS.

James Bardia	Cuba.
Samuel Aydelotte Billing	Montgomery.
Lula Marcia Bondurant	Lee.
Morris Jefferson Burts	Georgia.
Thomas Spyker Cowan	Lee.
Adam Charles Exnicios	Louisiana.
Milton Tucker Floyd	Chambers.
Elmore Wynn Gray	Georgia.
Richard Hackley Goulding	Florida.
James Robert Haigler	Montgomery.
Charles Leitner Howard	Georgia.
Claud Holstun	Chambers.
Frank Thomas Jackson	Mobile.
Jeremiah Jackson	Lee.
Edward Camot Janney	Montgomery.
Alphonso Rinaldo Jones	Coosa.
Welborn V. Jones	Lee.
John Furniss Knowlen	Dallas.
John Phineas Lee	Randolph.
Edward Sallust McCurdy	Lowndes.
Cary Park McElhaney	Lee.
William Edwin McEwen	Georgia.
Oscar Leonidas McKinstry	Pickens.
Edwin McKay	Barbour.
Edward Charles Mandy	Jefferson.
Josiah Thomas Mangum	Lee.
Thomas James Middleton	Lowndes.
George Emmet Pace	Pike.
Samuel James Shivers	Dallas.
Bedford Forest Sledge	Sumter.

William Cary Slocumb	Lee.
Alexander Clitherall Taylor.....	Montgomery.
Benjamin Asbury Taylor	Autauga.
Wiley Wesley Thomas.....	Talladega.
John Alexander Wadsworth	Autauga.
William Dunbar Wills	Lee.

SUB-FRESHMAN CLASS.

Willam Raiford Affleck.....	Georgia.
Harry Boland	Jefferson.
Lewis Edward Byrum.....	N. Carolina.
William Thomas Cammack	Wilcox.
Francis Robert Charles.....	Montgomery.
George Graham Cobb	Lee.
Louie Jones DeArman.....	Calhoun.
Arnold Frederick Glass.....	Mobile.
Charles William Glass.....	Mobile.
Ramesus Alfonzo Hammack.....	Dale.
Absalom Jackson	Mobile.
Thomas Alexander Means	Montgomery.
Edward Thompson Merrick.....	Louisiana.
George McElhaney Moore	Lee.
John St. Clair Paden.....	Etowah.
George Healy Randolph.....	Calhoun.
Charles Elisha Thomas.....	Lee.
James Leonard Thomas	Lee.
Hugh McCoy Vann.....	DeKalb.
Jesse T. Webb	Cherokee.

SUMMARY.

Graduates.....	14
Senior Class.....	40
Junior Class.....	33
Sophomore Class	59

Freshman Class	54
Special and Irregular Students.....	36
Total in College Classes	236
Sub-Freshman Class	20
Total	256

NUMBER OF STUDENTS IN EACH SUBJECT OF STUDY.

English.....	240	Geology.....	43
History.....	152	Civil Engineering.....	7
French	28	Electrical Engineering .	38
German.....	34	Mechanical Engineering	31
Latin	76	Biology	17
Mental Science	29	Drawing.....	154
Political Economy	39	Mechanic Arts.....	168
Mathematics	199	Military Tactics	250
Chemistry.....	111	Photography	14
Chemical Laboratory...	51	Mineralogy.....	2
Agriculture	135	Physical Laboratory ...	22
Physies.....	106	Physiology.....	67
Botany	68	Veterinary Science.....	27

MILITARY ORGANIZATION.

1893-94.

President:

W. L. BROUN.

Commandant:

JOHN H. WILLS, 1st. Lt. 22nd Infantry.

Surgeon:

J. H. DRAKE, M. D.

Major:

L. W. PAYNE.

Battalion Staff:

Cadet 1st Lieutenant C. J. DUNLAP, Adjutant.

Cadet 1st Lieutenant J. C. DUNHAM, Quartermaster.

Cadet Sergeant S. L. COLEMAN, Sergeant Major.

Cadet Sergeant J. A. WILLS, Quartermaster Sergeant.

Cadet Captains:

1. P. P. McKEOWN,
2. C. S. ANDREWS,

3. R. T. DORSEY,
4. J. THORINGTON.

Cadet 1st Lieutenants:

1. G. S. ANDERSON,
2. W. W. MOORE,
3. R. C. CONNER,
4. P. PREER,

5. C. G. GREENE,
6. R. G. WILLIAMS,
7. S. A. REDDING,
8. G. G. VAUGHAN.

Cadet 2nd Lieutenants:

1. S. LEACH,
2. P. H. MOORE,

3. J. A. DUNCAN,
4. J. D. LANE.

Cadet 1st Sergeants:

1. H. H. PEEVEY,
2. H. H. SMITH,

3. W. W. FULGHUM,
4. L. B. GAMMON.

Cadet Sergeants:

1. B. B. HARALSON,
2. W. C. McMILLAN,
3. R. H. ADAMS,
4. J. A. SMYTHE,
5. H. H. KYSER,
6. G. P. BONDURANT,
7. G. F. CHAMBERS,

8. H. W. TAYLOR,
9. C. LINN,
10. J. NEWSOM,
11. W. S. ASKEW,
12. J. C. THOMASON,
13. T. H. PHIPPS,
14. H. BICKERSTAFF,

15. W. R. SHAFER.

Cadet Corporals:

1. W. A. TIPPIN,
2. A. R. WILKERSON,
3. H. R. CASEY,
4. C. W. HILL,
5. F. M. LONGLEY,
6. R. C. HOLLEY,
7. G. M. HOLLEY,
8. J. A. REEVES,

9. A. D. JOHNSON,
10. A. L. ALEXANDER,
11. W. M. WILLIAM-,
12. W. E. CULVER,
13. R. L. GAINES,
14. F. MORRISSETTE,
15. J. W. CULVER,
16. W. E. HENLEY.

REQUIREMENTS FOR ADMISSION.

Applicants for admission must be of good moral character. To enter the freshman class the applicant must be not less than fifteen years of age, and should be qualified to pass a satisfactory examination on the following subjects:

1. Geography, and History of the United States.
2. English—(a) An examination upon sentences containing incorrect English. (b) A composition giving evidence of satisfactory proficiency in spelling, punctuation, grammar and division into paragraphs.

The composition in 1894 will be upon subjects drawn from one or more of the following works: Shakespeare's *Julius Cæsar* and *Merchant of Venice*, Longfellow's *Evangeline*, Irving's *Sketch Book*, Scott's *Marmion*, Hughes's *Tom Brown at Rugby*, Dickens's *David Copperfield*, Scott's *Ivanhoe*. Hawthorne's *House of the Seven Gables*.

3. Mathematics—(a) Arithmetic, including fundamental operations; common and decimal fractions; denominate numbers; the metric system; percentage, including interest and discount; proportion; extraction of square and cube roots. (b) Algebra, to quadratic equations.

Those applicants who desire to continue the study of Latin should be qualified to pass a satisfactory examination in Latin grammar and the first two books of *Cæsar*, in addition to the above subjects.

For admission to the higher classes, students should be prepared to stand a satisfactory examination on all the studies of the lower classes, as shown in the courses of study. Where opportunity has not been offered to pursue special studies required at this College, the system of equivalents will be adopted, and studies which denote an equivalent amount of discipline and training will be accepted as satisfactory.

ADMISSION OF YOUNG WOMEN.

The privilege of becoming students in this College is granted by the Trustees to young women of mature mind and character, on the following conditions:

The applicant must be eighteen years of age and be able to pass a satisfactory examination in two of the following subjects, one of which must be Mathematics:

(a) In English—Proficiency in spelling and punctuation; Grammar (Whitney's Essentials of English); Rhetoric (Lockwood, Abbott's How to Write Clearly, Genung); Scudder's American Prose Selections; Scudder's American Poems.

(b) In History—Macy's Our Government; Johnston's History of the United States; Myers's General History.

(c) In Mathematics—Arithmetic; Algebra, including quadratic equations, logarithms and series; Plane and Solid Geometry; Plane and Analytical Trigonometry, as in Wentworth.

(d) In Latin—Grammar, including the forms and syntax; Jones's Latin Prose Composition; Translations of selections from Cæsar, Nepos, Virgil, Cicero's Orations, Cicero's Letters, or the equivalent.

The equivalents of these subjects, as in above text-books, may be substituted.

If the applicant is a candidate for a degree, she will be required to pass a satisfactory examination in each of the four subjects named.

Certificates will be granted to those who are not candidates for a degree upon the satisfactory completion of any subject as pursued by the senior class.

When admitted, upon complying with the conditions above stated, they can enter upon the study of any subjects taught in the College, join any class, for which, upon examination, they may be found qualified. The only condition imposed will be that they engage in earnest study, and attend the exercises regularly. They will board in the village with private families, and attend College only at the hours of their exercises.

There will be no charge for tuition. The incidental fees, amounting to \$12.00 per year, will be paid, \$6.00 on entrance, and \$6.00 on February 1st.

ENTRANCE EXAMINATIONS.

Entrance examinations will be held on Wednesday, the 12th of September, the day on which the session opens. Candidates will also be examined during the session, when application is made for admission.

Applicants who are not prepared to stand the entrance examinations for full admission to the freshman class are admitted to the sub-college department.

They will be advanced to full admission to the freshman class when they are qualified to pass satisfactorily the required examinations.

Students upon their arrival at Auburn will report immediately to the President. No student will be admitted to a recitation in any class previous to matriculation.

NUMBER OF EXERCISES REQUIRED.

All students are required to have not less than fifteen recitations per week, or their equivalent, in addition to the exercises in laboratory work, drawing, and military drill. These additional exercises occupy not less than twelve hours per week and in all give twenty-seven exercises per week required.

SPECIAL AND IRREGULAR STUDENTS.

The privilege of electing studies in the lower classes is not granted to young students nor to their parents. The faculty will assign a student on admission to that class of a prescribed course for which he is qualified; but for special reasons, approved by the faculty, he may be permitted to become irregular.

Students qualified to prosecute the studies of the junior class, and those over twenty-one years of age that are not candidates for a degree, are permitted to take, with the advice of the faculty, the subjects of study for which they may be qualified.

Regular students who fail to pass satisfactory final examinations in any one study become special students. They will be classed as regular students pursuing a course for a degree, whenever they can

pass the examinations in those subjects in which they were found deficient.

Students, candidates for a degree, who are not in full standing in all the prescribed studies of a class, rank in the military department with that class in which they have the greatest number of studies, and their names are so placed in the catalogue.

COURSES OF INSTRUCTION.

The courses of study include the Physical, Chemical and Natural Sciences, with their applications; Agriculture, Biology, Mechanics, Astronomy, Mathematics, Drawing; Civil, Electrical, and Mechanical Engineering; Physiology, and Veterinary Science; English, French, German, and Latin Languages; History, Political Economy, Mental and Moral Sciences.

These studies are arranged in regular courses so as to offer a liberal and practical education as a preparation for the active pursuits of life.

There are four degree courses for undergraduates, each leading to the degree of Bachelor of Science (B. Sc.) and requiring four years for its completion:

- I. COURSE IN CHEMISTRY AND AGRICULTURE.
- II. COURSE IN MECHANICS AND CIVIL ENGINEERING.
- III. COURSE IN ELECTRICAL AND MECHANICAL ENGINEERING.
- IV. GENERAL COURSE.

There are also two partial courses, each requiring two years for its completion:

- V. TWO-YEAR COURSE IN AGRICULTURE.
- VI. TWO-YEAR COURSE IN MECHANIC ARTS.

Course I includes theoretical and practical instruction in those branches that relate to chemistry and agriculture, and is especially adapted to those who propose to devote themselves to agriculture or chemical pursuits.

Course II includes the principles and applications of the sciences that directly relate to civil engineering, and is adapted to those who expect to enter that profession.

Course III includes, besides the general principles and applications of the sciences, a special course in the applications of electricity and mechanics, and is arranged for the profession of electrical and mechanical engineering.

Course IV has been arranged to give a general and less technical education in subjects of science and language to meet the wants of those students who have selected no definite vocation in life, as well as of those who propose ultimately to engage in teaching, or in some commercial or manufacturing business.

Courses V and VI have been arranged for the benefit of those students who, for reasons satisfactory to themselves, are unable to continue at college four years and to take one of the regular degree courses.

Students who complete either of these two-year courses will, on passing a satisfactory examination, receive certificates indicating their attainments.

Those who have completed the general course in each department of the school of mechanic arts, and are qualified, can enter upon a more extended technical course in mechanical engineering.

PREPARATORY COURSE IN PHARMACY AND MEDICINE.

Students who look to pharmacy or medicine as a profession, and are qualified, can enter upon a special course in chemistry, botany, physiology and biology, and occupy their time with great profit in the laboratories of these departments under the immediate direction of the professors.

With the very excellent facilities offered in these laboratories scientific training and preparation of great value can be obtained.

COURSE IN MINING ENGINEERING.

Students who have received the degree of B. Sc. in engineering, or who have prosecuted an equivalent course of study, can enter upon a special course of mining engineer-

ing, which includes the following subjects of study, and will require a residence of one year :

Industrial Chemistry, Assaying, Reduction of Ores, Mineralogy, Economic Geology, Mining Machinery, Drifting, Tunnelling, Timbering, Ore Dressing, and the various operations connected with the exploitation of mines.

This course of study will be under the charge of the professors of chemistry, engineering, botany and geology.

SPECIAL ONE-YEAR COURSE IN AGRICULTURE.

Young men over twenty-one years of age who desire to study agriculture will be permitted, without examination, to enter any class under the professor of agriculture, and will be excused from reciting in any other class, from military duty, and from all other college duties ; but will be under the general college regulations, and will be required to have their time fully occupied.

They can attend the lectures in agriculture in all the classes and engage in the practical work at the experiment station, in the field, stock-yard, dairy, garden, orchard, vineyard, etc., and may thus, in one year, acquire valuable practical knowledge of scientific agriculture.

LABORATORY INSTRUCTION.

Laboratory instruction constitutes an important feature in the courses of education provided for the students of this College, and as far as possible all students are required to enter upon laboratory work in some one department.

Laboratory instruction and practical work are given in the following departments :

I.—CHEMISTRY.

II.—ENGINEERING, FIELD WORK, SURVEYING, ETC.

III.—AGRICULTURE.

IV.—BOTANY.

V.—MINERALOGY.

VI.—BIOLOGY.

VII.—TECHNICAL DRAWING.

VIII.—MECHANIC ARTS.

IX.—PHYSICS.

X.—ELECTRICAL ENGINEERING.

XI.—PHYSIOLOGY AND VETERINARY SCIENCE.

NOTE—Special work in English or History may be taken by students in the General Course as a substitute for laboratory work.

I.—COURSE IN CHEMISTRY AND AGRICULTURE.

The numerals opposite the subjects indicate the number of hours per week.

FRESHMAN CLASS.

First Term.

- 5. English.
- 2. History.
- 5. Mathematics.
- 3. Elementary Physics.
- 3. Drawing.
- 6. Mechanic Art Labor'y.
- 3. Military Drill.

Second Term.

- 5. English.
- 2. History.
- 5. Mathematics.
- 3. Elementary Physics.
- 3. Drawing.
- 6. Mechanic Art Labor'y.
- 3. Military Drill.

Third Term.

- 5. English.
- 3. History.
- 5. Mathematics.
- 2. Agriculture.
- 3. Drawing.
- 6. Mechanic Art Labor'y.
- 3. Military Drill.

SOPHOMORE CLASS.

First Term.

- 3. English.
- 3. History.
- 5. Mathematics.
- 3. General Chemistry.
- 2. Agriculture.
- 3. Drawing.
- 6. Mechanic Art Labor'y.
- 2. Practical Agriculture.
- 3. Military Drill.

Second Term.

- 3. English.
- 3. History.
- 5. Mathematics.
- 3. General Chemistry.
- 2. Agriculture.
- 2. Drawing.
- 6. Mechanic Art Labor'y.
- 2. Physiology.
- 3. Military Drill.

Third Term.

- 2. English.
- 3. Botany (a).
- 5. Mathematics.
- 3. General Chemistry.
- 2. Agriculture.
- 2. Drawing.
- 6. Mechanic Art Labor'y.
- 2. Physiology.
- 3. Military Drill.

JUNIOR CLASS.

First Term.

- 3. English.
- 3. Physics.
- 3. Industrial Chemistry.
- 2. Agriculture.
- 4. Botany (Lab'y).
- 1. Military Tactics.
- 9. Chemical Laboratory.
- 2. Veterinary Science.
- 3. Military Drill.

Second Term.

- 3. English.
- 3. Physics.
- 3. Industrial Chemistry.
- 2. Agriculture.
- 4. Botany (Lab'y).
- 1. Military Tactics.
- 9. Chemical Laboratory.
- 2. Veterinary Science.
- 3. Military Dill.

Third Term.

- 3. English.
- 3. Physics.
- 3. Industrial Chemistry.
- 2. Agriculture.
- 4. Botany (Lab'y).
- 1. Military Tactics.
- 9. Chemical Laboratory.
- 2. Veterinary Science.
- 2. Military Drill.

(a) Begins March 1st.

SENIOR CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
2. English Literature.	2. Political Economy.	2. Political Economy.
2. Mental Science.	2. Mental Science.	2. Mental Science.
2. Physics.	2. Astronomy.	2. Astronomy.
2. Geology.	2. Geology.	2. Geology.
5. Biology.	5. Biology.	5. Biology.
2. Agricultur'l Ch'm'try.	2. Agricultur'l Chem'try.	2. Agricultur'l Chem'try.
1. Military Science.	1. Military Science.	1. Military Science.
9. Chemical Laboratory.	9. Chemical Laboratory.	9. Chemical Laboratory.
2. Practical Agriculture.	2. Veterinary Science.	2. Veterinary Science.

II.—COURSE IN MECHANICS AND CIVIL ENGINEERING.

The numerals opposite the subjects indicate the number of hours per week.

FRESHMAN CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
5. English.	5. English.	5. English.
2. History.	2. History.	3. History.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Elementary Physics.	3. Elementary Physics.	2. Agriculture.
3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SOPHOMORE CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
3. English.	3. English.	3. English.
3. History.	3. History.	3. Botany (a).
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. General Chemistry.	3. General Chemistry.	3. General Chemistry.
2. Agriculture (b).	2. Agriculture (b).	2. Agriculture (b).
3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

(a) Begins March 1st.

(b) For Agriculture may be substituted Physical Laboratory.

JUNIOR CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
3. English, French, or German.	3. English, French, or German.	3. English, French, or German.
3. Physics.	3. Physics.	3. Physics.
5. Mathematics.	5. Mathematics.	5. Mathematics.
5. Civil Engineering.	5. Civil Engineering.	5. Civil Engineering.
5. Drawing.	5. Drawing.	5. Drawing.
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
4. Lab'y, Mineralogy (a).	4. Lab'y, Mineralogy (a).	6. Field W'rk, Engin'g(a).
4. Field Work, Engin'g.	4. Field Work, Engin'g.	3. Military Drill.
3. Military Drill.	3. Military Drill.	

SENIOR CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
2. English Literature(b).	2. Political Economy(b).	2. Political Economy(b).
2. Physics.	2. Astronomy.	2. Astronomy.
2. Geology.	2. Geology.	2. Geology.
3. Mathematics.	3. Mathematics.	3. Mathematics.
5. Civil Engineering.	5. Civil Engineering.	5. Civil Engineering.
5. Drawing.	5. Drawing.	5. Drawing.
1. Military Science.	1. Military Science.	1. Military Science.
Field W'rk, Engin'g.	Field W'rk, Engin'g.	Field W'rk, Engin'g.

III.—COURSE IN ELECTRICAL AND MECHANICAL ENGINEERING.

The numerals opposite the subjects indicate the number of hours per week.

In freshman and sophomore classes same as in course in mechanics and civil engineering.

JUNIOR CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
3. English, French, or German.	3. English, French, or German.	3. English, French, or German.
3. Physics.	3. Physics.	3. Physics.
5. Mathematics.	5. Mathematics.	5. Mathematics.
5. Electrical Engin'g.	5. Electrical Engin'g.	5. Electrical Engin'g.
2. Mech. Engineering.	2. Mech. Engineering.	2. Mech. Engineering.
4. Mechanical Drawing.	4. Mechanical Drawing.	4. Mechanical Drawing.
6. Electrical Laboratory.	6. Electrical Laboratory.	6. Electrical Laboratory.
6. Mech. Art Lab'y.	6. Mech. Art Lab'y.	6. Mech. Art Lab'y.
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
3. Military Drill.	3. Military Drill.	3. Military Drill.

(a) Or Mechanic Arts.

(b) For Eng. Lit. and Pol. Econ. may be substituted French or German.

SENIOR CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
2. English Literature(b).	2. Political Economy (b).	2. Political Economy(b).
2. Physics.	2. Astronomy.	2. Astronomy.
2. Geology.	2. Geology.	2. Geology.
3. Mathematics.	3. Mathematics.	3. Mathematics.
5. Electrical Engineer'g.	5. Electrical Engineer'g.	5. Electrical Engineer'g.
5. Mech. Engineering.	5. Mech. Engineering.	5. Mech. Engineering.
2. Electrical Designing.	2. Electrical Designing.	2. Electrical Designing.
6. Electrical Laboratory.	6. Electrical Laboratory.	6. Electrical Laboratory.
1. Military Science.	1. Military Science.	1. Military Science.

IV.—GENERAL COURSE.

The numerals opposite the subjects indicate the number of hours per week.

FRESHMAN CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
3. English.	3. English.	3. English.
2. History.	2. History.	3. History.
5. Latin.	5. Latin.	3. Latin.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	2. Agriculture.
3. Military Drill.	3. Military Drill.	6. Mechanic Arts.
		3. Military Drill.

SOPHOMORE CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
5. Latin.	5. Latin.	5. Latin.
3. History.	3. History.	3. Botany (a).
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. General Chemistry.	3. General Chemistry.	3. General Chemistry.
3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

(a) Begins March 1st.

(b) French or German may be substituted.

JUNIOR CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
3. English.	3. English.	3. English.
3. Physics.	3. Physics.	3. Physics.
3. Mathematics.	3. Mathematics.	3. Mathematics.
3. French.	3. French.	3. French.
3. German.	3. German.	3. German.
3. Latin.	3. Latin.	3. Latin.
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
6. Laboratory Work (b).	6. Laboratory Work (b).	6. Laboratory Work (b).
3. Military Drill.	3. Military Drill.	3. Military Drill.

SENIOR CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
2. English Literature.	2. Political Economy.	2. Political Economy.
2. Mental Science.	2. Mental Science.	2. Mental Science.
2. Physics.	2. Astronomy.	2. Astronomy.
2. Geology.	2. Geology.	2. Geology.
3. French.	3. French.	3. French.
3. German.	3. German.	3. German.
2. Latin.	2. Latin.	2. Latin.
1. Military Science.	1. Military Science.	1. Military Science.
6. Laboratory Work (b).	6. Laboratory Work (b).	6. Laboratory Work (b).

(b) The student may elect the laboratory of any department for which he may be qualified.

V.—TWO-YEAR COURSE IN MECHANIC ARTS.

FIRST YEAR.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
5. English.	5. English.	5. English.
2. History.	2. History.	3. History.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Elementary Physics.	3. Elementary Physics.	2. Agriculture.
3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SECOND YEAR.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
3. English.	3. English.	3. English.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Physics.	3. Physics.	3. Physics.
3. Drawing.	3. Drawing.	3. Drawing.
12. Mechanic Art Lab'y.	12. Mechanic Art Lab'y.	12. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

VI.—TWO-YEAR COURSE IN AGRICULTURE.

FIRST YEAR.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
5. English.	5. English.	5. English.
2. History.	2. History.	3. History.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Elementary Physics.	3. Elementary Physics.	2. Agriculture.
3. Drawing.	3. Drawing.	3. Drawing.
4. Mechanic Art Lab'y.	4. Mechanic Art Lab'y.	4. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.
2. Practical Agriculture.	2. Practical Agriculture.	2. Practical Agriculture.

SECOND YEAR.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
3. English.	3. English.	3. English.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. General Chemistry.	3. General Chemistry.	3. General Chemistry.
4. Agriculture.	5. Agriculture.	4. Agriculture.
2. Veterinary Science.	2. Veterinary Science.	2. Veterinary Science.
12. Practical Agriculture.	12. Practical Agriculture.	12. Practical Agriculture.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SCHEDULE OF EXERCISES.

HOURS	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
I 8-9	4. Algebra. 3. Latin. 1 and 2 Drawing. 1. Elec. Eng'n'r'g. 2. Mech. Eng'n'r'g.	3. Physiology. 4. Geometry. 3. Latin. 2. German. 1 and 2 Drawing. 2. Botany. 1. Mental Science. 1. Elec. Eng'n'r'g.	4. Algebra. 3. Latin. 1 and 2 Drawing. 1. Vet. Science. 1. Elec. Eng'n'r'g.	3. Physiology. 4. Geometry. 3. Latin. 2. German. 1 and 2 Drawing. 2. Botany. 1. Mental Science. 1. Elec. Eng'n'r'g.	4. Algebra. 3. Latin 1 and 2 Drawing. 1. Vetin'y. Sci. 1. Elec. Engin'r'g.	Exerc's. in Elocution
II 9-10	4. English. 3. Chemistry. 2. Engineering. 2. Latin. 1. Calculus. 2. Elec. Engn'r'g.	4. History. 3. Agriculture. 2. Engineering. 2. Botany. 1. Physics. 2. Elec. Engin'r'g.	4. English. 3. Chemistry. 2. Engineering. 2. Latin. 1. Calculus. 2. Vet. Science. 2. Elec. Engin'r'g.	4. History. 3. Agriculture. 2. Engineering. 2. Botany. 1. Physics 2. Elec. Engin'r'g.	4. English. 3. Chemistry. 2. Engineering. 2. Latin. 1. Biology. 1. Calculus. 2. Elec. Eng'n'r'g. 2. Vet. Science.	Military Drill.
III 10-11	3. English. 2. Physics. 1. German. 1. Engineering. 1. Biology. 3. Botany (2. 3). 1. Mech. Engn'r'g.	3. History (1.2). 3. Botany (2.3). 1. Biology. 1. Engineering. 4. English. 1. Mech. Engn'r'g. 2. French.	3. English (1.2). 3. Botany (2.3). 2. Physics. 1. German. 1. Engineering. 1. Biology. 1. Mech. Engn'r'g.	3. History 1.2). 3. Botany (2.3). 1. Engineering. 4. English. 1. Mech. Engin'r'g. 2. French.	3. English. 2. Physics 1. German. 1. Engineering. 1. Biology. 4. History (3). 1. Mech. Engin'g.	Mechanic Arts. Chemical Lab'r'ry. Electrical Lab'r'ry Physical Laboratory Veterinary Clinics. Biologic'l Lab'r'ry Field Engineering.

	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
IV. 11-12	4. Physics (1.2). 3. Drawing.	4. Latin. 3. Drawing.	4. Physics (1.2). 4. Latin (3). 3. History (1.2).	4. Latin.	4. Physics (1.2).	
	4. Agriculture (3). 4. Latin (1.2). 3. Drawing. 2. Mathematics. 2. Chemistry. 1. English (1). 1. Polit. Econ. (2.3) 4. Mech. Arts.	2. Agriculture. 2. Mathematics. 1. Chemistry. 1. French.	2. Mathematics. 2. Chemistry. 1. English (1). 1. Political Economy (2.3). 4. Mech. Arts.	2. Agriculture. 2. Mathematics. 1. Chemistry. 3. Physiology (3). 1. French.	4. Agriculture (3). 4. Latin (1.2). 3. Drawing. 2. Mathematics. 2. Chemistry. 1. Military Sci. 4. Mechanic Arts.	1. French. 3. Mechanic Arts. Chemical Lab'y. Electrical Lab'y. Physical Lab'y. Veterinary Clinics. Biological Lab'y. Field Engineering.
V. 12-1	4. Drawing. 3. Mathematics. 2. English. 4. Mech. Arts. 1. Elec. Designing	3. Mathematics. 2. English. 1. Geology.	4. Drawing. 3. Mathematics. 1. Latin. 4. Mech. Arts. 2. Mech. Eng'g. 2. German. 1. Elec. Design'g.	3. Mathematics. 2. English. 1. Geology.	4. Drawing. 3. Mathematics. 1. Latin. 4. Mech. Arts. 1. Elec. Designing 2. Military Tactics	2. French. 3. Mechanic Arts. Chemical Lab'y. Electrical Lab'y. Physical Lab'y. Veterinary Clinics. Biological Lab'y. Field Engineering.
P. M.	4. Mech. Arts.	3. Mech. Arts.	4. Mech. Arts.	3. Mech. Arts.	4. Mech. Arts.	
VL VII	3. Field W'rk. Agr. 1 & 2 Laboratory, Chem.	2. Mineralogy Laboratory	3. Field W'rk Agr. 1 & 2. Laboratory. Chem.	2. Mineralogy Laboratory.	3. Field W'rk. Agr.	
2-4	1 & 2 Field Work, Eng. 1 & 2 Mach. Work. Elec. Lab'y Work. Physical Lab'y.	Military Drill (*). 3. Mach. Work. Elec. Lab'y Work. 1 & 2 History.	1 & 2. Field Work, Eng'g. 1 & 2. Mach. Work Exer's in Elocut'n Elec. Lab. Work. Physical Lab'y.	3. Machine Work. Elec. Lab'y Work 1 & 2 History.	1 & 2. Lab. Chem. 1 & 2. Field Work, Eng'g. 1 & 2. Mach. Work. Exer's in Elocut'n. Elec. Lab. Work. Physical Lab'y.	

Chapel services daily at 7:50 a. m.

Numbers prefixed denote classes,—1 denotes senior, 2 Junior, etc. Numbers affixed—(1), (2), (3), denote terms.

*From 4:30 to 5:30 p. m.

DEPARTMENTS OF INSTRUCTION.

PHYSICS AND ASTRONOMY.

PRESIDENT BROWN.

The instruction is given by recitations from text-books and lectures, illustrated by experiments. The first part of the course is occupied with elementary rational mechanics, treated graphically.

This is followed by a full discussion of molecular mechanics; while due prominence is given to principles, frequent reference is made to the applications of science.

The studies of the junior class include the properties of matter, units of measure, force, work, energy, kinematics, kinetics, mechanic powers, friction, pendulum, molecular forces of solids, liquids and gases, theory of undulations, heat, electricity, magnetism, etc.

The studies of the senior class include optics and astronomy.

Post-Graduate Course. This includes the study of analytical mechanics, and requires a knowledge of differential and integral calculus.

PHYSICAL LABORATORY.

Instructor A. St. C. Dunstan has charge of the classes in elementary physics and of the physical laboratory. In elementary physics the students are taught mechanics, solving problems by the elements of graphical statics, and are required to do such work in the physical laboratory as is adapted to their attainments. A part of their time is given to learning practical telegraphy by the use of instruments provided for that purpose.

The physical laboratory is equipped with a number of instruments of foreign and American manufacture. It contains a standard metre bar, a horizontal comparator, a Kater reversion pendulum, a cathometer with micrometer, a spectrometer furnished with prisms, crystal holder and flat diffraction grating, made by the Societe Genevoise, a spectroscope by Browning, with a large amount of spectrum apparatus, a Riehle Brothers' 35,000 lb. testing machine tensile compression and transverse strain, a Carre's ice machine, Becker's balances, a small dividing engine and a vertical comparator, both the latter made at the College in the laboratory of mechanic arts, the comparator measuring to 1.2000th millimetre. There is also a large amount of minor apparatus, thermometers, barometers, calorimeters, and apparatus for experimentally determining the parallelogram of forces, for determining rolling and sliding friction, torsion and flexure, specific gravity, etc.

The student in this laboratory is required to ascertain experimentally various physical laws, hence in all exercises there is something to measure. From these measures he is required to find the law connecting the quantities involved. Results of experiments are required to be entered, in tabular form, together with diagrams, etc., in a laboratory note-book.

MATHEMATICS.

PROF. SMITH.

The general course for the first two years embraces the first year, algebra and geometry, six books; second year, solid geometry, plane and spherical trigonometry, surveying, mensuration.

Two objects are sought to be attained: first, mental discipline; second, a thorough knowledge of the principles of pure mathematics and their practical applications.

Theoretical and practical instruction is given to the sophomore class in farm, town, and government land surveying, dividing land, mapping, plotting, and computing areas, etc.; also in the theory, adjustment and use of instruments.

The class, in sections of six or eight, devote three afternoons a week during the second and third terms to field practice.

Mensuration includes an extended course in measurements of heights and distances, plane, rectilinear and curvilinear figures, surfaces and volumes.

The completion of this course, common to all students, lays the foundation for the pure and applied mathematics of the mechanical and engineering courses. Analytical geometry, descriptive geometry, and calculus are pursued in the mechanical and engineering courses. Especial attention is given to their practical applications.

During the entire course, instruction in text-books is supplemented by lectures. Solutions of original practical problems are required of the student, to make him familiar with the application of principles and formulæ.

TEXT-BOOKS.

Wentworth's Algebra, Wentworth's Geometry, Wentworth's Trigonometry and Surveying, Wentworth's Analytical Geometry, Faunce's Descriptive Geometry, Taylor's Calculus.

BOTANY AND GEOLOGY.

PROF. MELL.

Geology.—This subject is studied in the senior class, and extends through the entire session. Special attention is given to the geology of Alabama, and many illustrations are drawn from the coal and iron fields and other natural deposits of minerals in the State. The origin of ore deposits, mineral springs and geological relations of soils are carefully studied.

There is also a course of advanced work in practical geology for post-graduate students. This subject is pursued by applicants for degrees of master of science and mining engineer.

The junior class in engineering spends two terms in mineralogy and blow-pipe work.

Botany.—The students of the sophomore class begin the study of botany the first of March and continue it through the session. Analytical work is made an important feature.

This class is provided with plants from the fields, and taught how to determine their specific names. The work is sufficiently exhaustive to enable the student, after completing the course, to name any of the ordinary weeds and grasses that he will encounter in this section.

In the junior class, in the course of chemistry and agriculture, an amount of time is devoted to systematic and structural botany, and to advanced laboratory work with the microscope in the preparation of specimens showing plant structure; this work is sufficient to familiarize the students with the methods of plant building and cellular organization. Excellent microscopes of the most improved patterns, and all the necessary chemicals and apparatus for preparing and mounting vegetable tissues, are used by the students. A dark room is attached to this laboratory for photomicrography.

TEXT-BOOKS.

LeConte's Geology, Gray's Botany, Dana's Mineralogy, Goodale's Physiological Botany, Nelson's Herbarium and Plant Descriptions, Williams's Practical Geology, and the Professor's Notes.

CIVIL ENGINEERING AND DRAWING.

PROF. LANE.

CIVIL ENGINEERING.

The special studies of this department begin in the junior class, and require a good knowledge of algebra, geometry, trigonometry and analytical mechanics. They are as follows:

Junior class.—Simple, compound, reversed and parabolic curves, turnouts and crossings, leveling, gradients, setting slope stakes, etc.

Special attention will be paid in this class to the location, reconstruction, drainage and maintenance of country roads; and the various pavements and foundations for the same.

Senior class.—Classification, appearances, defects, sea-

soning, durability and preservation of timber, classification and description of natural building stones; bricks and concretes; cast and wrought iron, steel and other metals; limes, cements, mortars and their manufacture; paints and other preservatives; classification of strains and a general mathematical discussion of same; joints and fastenings; solid and open built beams; classification, construction and mechanics of masonry; foundations on land and in water; bridges and roofs of different kinds; their construction and strains determined mathematically and graphically; common roads, their coverings, location and construction; location and construction of railroads; navigable, irrigation, and drainage canals; river and sea-coast improvements.

Theory and practice are combined in both classes.

TEXT-BOOKS.

Junior class.—Henck's Field Book for Railway Engineers and Byrne's Highway Construction.

Senior class.—Wheeler's Civil Engineering and Von Ott's Graphic Statics.

DRAWING.

All of the students of the freshman and sophomore classes are required to take drawing; but only the students in mechanics and civil engineering in the junior and senior classes.

The freshman class is taught linear and free-hand drawing. The sophomore class is instructed in the principles of orthographic and isometric projections, shade and shadows, perspective and tinting. In the junior class the instruction embraces a more extended course in orthographic and isometric drawing, perspective, shades and shadows, and tinting; also sketches of tools and machines, plans, elevations and cross-sections of buildings, and blue prints. The senior class make topographical drawings, and drawings of machines, roofs, bridges, etc., to different scales, and blue prints. Plans, profiles and sections of railroad surveys complete the instruction in this department.

TEXT-BOOKS.

Freshman class.—Kitchener's Geometrical Note Book, Thorne's Junior Course in Mechanical Drawing, and Davidson's Model Drawing.

Sophomore class.—Davidson's Projections, Davidson's Practical Perspective, Keuffel & Esser's Alphabet.

Junior class.—Davidson's Building Construction, Davidson's Drawing for Mechanics and Engineers, Plates belonging to the College, Keuffel & Esser's Alphabet.

Senior class.—French, English and American Plates belonging to the College, Keuffel & Esser's Alphabet.

ENGLISH AND POLITICAL ECONOMY.

PROF. THACH.

OBJECTS AND METHODS.

In this department the students pursue a systematic course in the English language and literature.

Language is the avenue of approach to all knowledge; the interpretation of words is the fundamental process in education of whatsoever kind. A full course of English is, therefore, considered especially important in the technical courses of study that do not include the ancient classics. Accordingly, the course of English is continued throughout the four years of the College curriculum, three hours a week, and is made obligatory upon all students, with the exception of those pursuing the first two years of the course in Latin. In this extended drill in the grammar and literature of the English language, the endeavor is made to afford a training somewhat equivalent to the ordinary course in the classical languages.

In view of the ill preparation in languages, especially in their mother tongue, exhibited by many of the candidates for admission to the freshman class, it is deemed advisable, for the sake of honest work, to devote a portion of the first year to grounding such students in the principles of grammar. Further, with the idea that an ability to speak and write correctly English of the present, and to appreciate

the literary excellencies of standard authors, is more desirable than training in the philological curiosities and literary crudities of Anglo-Saxon literature, the course of study in this institution is confined exclusively to the literature of modern English.

Especial attention is given to the study of the writings, themselves, of leading English authors, since direct contact with literature is considered more profitable than information merely *about* literature.

COURSE OF STUDY.

Freshman class.—Five hours a week; study of grammar, the principles of special and general composition, with frequent brief papers illustrating the laws studied; study of American authors: Irving, Hawthorne, Holme, Poe, Bryants, Longfellow.

Whitney's Essentials, Lockwood's Rhetoric, Scudder's American Poems, Scudder's American Prose.

Sophomore class.—Three hours a week; study of style, analysis of selections of prose and poetry, frequent essays on historic and literary themes.

Genung's Rhetoric, Genung's Rhetorical Analysis, Hales's Longer English Poems, Beers's Century of American Literature.

Junior class.—Three hours a week; lectures on the history of English literature, critical study of English classics, essays.

Stopford Brooke's History of English Literature, Palgrave's Golden Treasury; Minto's English Prose, Garnett's English Prose from Elizabeth to Victoria; Dryden, Tennyson.

Senior class.—Two hours a week, first term. Principles of Criticism, Shakespeare's Julius Cæsar, Hamlet, etc.

ESSAYS AND ORATIONS.

Theory without practice is as fruitless in the study of English as in any other department of study. Practical work is indispensable to the successful teaching of English.

Besides numerous brief papers, illustrative of the subject matter of the text-books, set essays or orations are required of all students: for the freshman class, ten essays a year; ten for the sophomore; for the senior and junior classes, three orations each.

DECLAMATION.

The old practice of committing pieces to memory for "speaking" is cultivated as a means, both of training in the art of thinking on the feet, and of storing the mind with the diction of finished specimens of English style.

The sophomore class is heard weekly throughout the year in sections of ten, once for an hour and a half in rehearsal, afterwards in the study hall before the body of students.

The senior and junior classes also deliver their orations in public.

PHILOSOPHY AND POLITICAL ECONOMY.

The entire senior class pursues the study of intellectual science, twice a week, through the year; and political economy twice a week, during the last two terms. The instruction in this department is by lectures in combination with text-books.

Intellectual Science.—Psychology defined. Value in relation to moral culture, education, and Natural Sciences. The Relations of the Soul to matter. The arguments of the Materialist. Counter arguments. The Faculties of the Soul. The nature of Consciousness. Sense Perception. *Memory*, its nature, development, education. *Fancy*. *Imagination*. Nature of conceptions. *Language*. *Judgment*. *Reasoning*. *Deduction*. *Induction*, etc. *Porter's Intellectual Science*.

Political Economy.—Value; production of wealth; land; labor; capital; division of labor; distribution of wealth; wages; trades-union; co-operation; *money*; credit; functions of government; taxation; tariff; education, etc. *F. A. Walker's Advanced Political Economy*. *Lectures by Professor*.

A *Post-graduate Course* has been established in Political Economy. Topics are assigned for research by the student, who is facilitated in his labor by a well chosen library, including most of the standard works on political economy and government.

A *Post-graduate Course* has also been established in English. The course is as follows: Shakespeare's Hamlet, Othello, Macbeth, Merchant of Venice, As You Like It, Henry IV., Part I, Richard III., King John.

REFERENCE BOOKS.

Ward's Shakespeare; Furness's Variorum; Hudson's Shakespeare; Clark and Wright's Select Plays of Shakespeare; Rolfe's Shakespeare; Halliwell-Phillips's Life of Shakespeare; Richard Grant White's Life of Shakespeare; Collier's Annals of the Stage; J. A.

Symonds's Shakespeare's Predecessors; Hudson's Art, Life, etc., of Shakespeare; Giles's Human Life in Shakespeare; Mrs. Jameson's Woman in Shakespeare; Dowden's Shakespeare's Art.

CHEMISTRY.

PROF. B. B. ROSS.

Instruction in this department embraces—

1. A course of lectures in general chemistry.
2. A course of lectures in industrial chemistry.
3. A course of lectures in agricultural chemistry.
4. Systematic laboratory work in connection with each course of lectures, for the practice of chemical analysis and chemical research.

1. Course in general chemistry: This consists of a series of lectures (three per week) extending throughout the entire session, and includes a discussion of the fundamental principles of chemical philosophy in connection with the history, preparation, properties and compounds of the metallic and non-metallic elements, with the main facts and principles of organic chemistry. In this course the more common applications of chemistry to the arts and manufactures are discussed. The apparatus used for experimental illustration is extensive, containing the newest and most approved instruments necessary for presenting the subject in the most attractive and instructive form.

REFERENCE BOOKS.

Roscoe & Schorlemmer, Fownes, Frankland, Remsen, Cooks's Chemical Philosophy, Chemical Journals.

2. The lectures on industrial chemistry (three per week) extend throughout the session, and include a discussion in detail of the processes and chemical principles involved in the most important applications of chemistry in the arts and manufactures to the reduction of ores, the preparation of materials for food and drink, for clothing, shelter, illumination, cleansing, purifying, writing, printing, etc.

These lectures are amply illustrated by means of suitable

specimens of raw materials and manufacturing products, together with models and diagrams.

REFERENCE BOOKS.

Wagner's Chemical Technology, Muspratt's Chemistry as applied to Arts and Manufacturing, Ure's Dictionary, Watt's Dictionary, Richardson and Watt's Chemical Technology, Percy's Metallurgy, Sadtler's Industrial Organic Chemistry.

3. Course in agricultural chemistry: This consists of lectures on chemistry in its applications to agriculture (two per week), and includes a thorough discussion of the origin, composition and classification of soils, the composition and growth of plants, the sources of plant food and how obtained, the improvement of soils, the manufacture and use of fertilizers, the chemical principles involved in the rotation of crops, the feeding of live stock, and the various operations carried on by the intelligent and successful agriculturist.

REFERENCE BOOKS.

Johnson's How Crops Grow and How Crops Feed, Lupton's Elementary Principles of Scientific Agriculture, Johnson and Cameron's Elements of Agricultural Chemistry, Storer's Agriculture in relation with Chemistry, scientific journals, reports of the United States Department of Agriculture, and the bulletins and reports of the various home and foreign agricultural departments and stations.

4. The course of systematic laboratory work: This course of practical work in the laboratory is carried on in connection with each course of lectures, and embraces the practical operation of chemical analysis and synthesis, being varied somewhat to suit the individual object of the student.

The laboratories, which are open from 9 A. M. to 5 P. M., during six days in the week, are amply supplied with everything necessary for instruction in chemical manipulation, in the qualitative and quantitative analysis of soils, fertilizers, feed stuffs, sugar products, minerals, mineral waters, technical products, etc., and in the method of prosecuting chemical researches. Unusual facilities are offered to students who wish to devote their time to the special study of practical chemistry.

Each student on entering the chemical laboratory is furnished

with a work table, a set of re-agent bottles, and the common re-agents and apparatus used in qualitative and quantitative analysis. At the close of the session he will be credited with such articles as may be returned in good order; the value of those which have been injured or destroyed will be deducted from the deposit.

In addition to the analytical work above described, it is designed to introduce during the next session a short course in electro-plating.

Practical instruction in the electro-deposition of nickel, silver, gold, etc., upon other metals will be given, and, in addition, the applications of electrolysis to chemical analysis will be studied both theoretically and practically.

BOOKS USED.

In qualitative analysis—Jones, Fresenius, Plattner.

In quantitative analysis—Fresenius, Sutton, Rose, Bunsen, Rickett's Notes on Assaying, Mitchell's Manual of Practical Assaying.

In Agricultural chemical analysis—Official methods of the Association of Agricultural Chemists.

Wiley's Principles and Practice of Agricultural Analysis.

CHEMICAL LABORATORY.

[For description of the building see page 13.]

The chemical apparatus recently purchased for the laboratory consists of a full supply of the most approved instruments for practical work and investigation. The building is supplied with water and gas and every appliance required to meet the demands of modern scientific instruction and research. In addition to the apparatus usually supplied to first-class laboratories, there have been imported a new and improved Schmidt and Hensch's polariscope, four short-arm Becker Balances of latest pattern, Bunsen spectroscope, Zeiss microscope, and other instruments for delicate and accurate work.

BIOLOGY.

PROF. STEDMAN.

PRACTICAL BIOLOGY.—This subject is presented by lectures and laboratory work to the senior students in agriculture and chemistry. The first part of the year will be devoted to the study of zoology and entomology with special reference to practical agriculture. This will be followed by the study of bacteriology and mycology giving prominence to the causes of diseases of cultivated plants. Special at-

tention will be given to methods employed in combatting the attacks of fungi and insects upon plants. The lectures will be illustrated as far as possible by actual specimens, and by the use of the stereopticon and oxy-hydrogen light for micro-projection, and also by the use of several hundred lantern slides specially prepared for these lectures. The biological museum is primarily for the illustration of the lectures and contains several hundred marine invertebrates as well as representations of nearly all orders of animals.

The reference books will be announced to the classes. The department contains a carefully selected library of the standard works on mycology and many rare and valuable works, besides current periodicals adapted to aid in the special investigations carried on in the laboratory.

Especial opportunities are offered to graduate students who desire to pursue advanced work and engage in original investigations.

FACILITIES FOR WORK.

At present three rooms are occupied by the department—an office, lecture room, and laboratory. The office contains the cabinet of fungi, the technical library for the department, slate table with a Zeiss microscope, re-agents, gas and water fittings. The work in the office consists of the examination, identification and cataloguing of the specimens, beside the special work peculiar to such an office. The cabinet is provided with tight drawers, for receiving the mounted specimens of fungi and insects.

LABORATORY.—Five slate top tables are devoted to the use of students, there being 10 Leitz microscopes set apart for them.

Two small culture rooms contain the plate and test tube cultures of fungi and bacteria which are being studied in relation to the plant diseases they cause. Here they can be handled and studied with little danger of contamination from the dust of the laboratory. In these rooms are kept Rohrbeck thermostats fitted with automatic cut off burners and Lautenschlager's most recent thermoregulator for maintaining constant temperatures.

A Winkel microscope is kept here for the examination of cultures. It consists of stand No. 2, with condenser, triple revolver, homogeneous immersion lens 1-24 and 1-14, dry objectives No. 3 and No. 7, oculars 1, 3 and 5, and micrometer ocular.

A Winkel microscope is also kept for the use of the students, like the former, except the 1-24 homogeneous immersion lens.

The other piece of apparatus are follows:

Steam sterilizer, dry sterilizer, domestic still, instantaneous water heater, Pasteur filter, fine and common balances, apparatus for demonstrating intramolecular breathing of yeast, the Brendel models of parasitic and sapro-phytic fungi, bacteria and yeast plants, automatic device for rolling culture tubes of nutrient agar agar, microtomes and paraffine water bath.

There are also cases containing a large quantity of the various glass vessels, paper, dry and liquid dyes and re-agents, culture media, etc., required in modern investigation.

The laboratory is well lighted from southern and western exposure. All the rooms are well fitted with gas and water supply.

A phytopathological laboratory has recently been fitted up for conducting investigations on the diseases of plants. While this constitutes part of the equipment for the biologist in experiment station work, it will be at the disposal of the department for instruction.

HISTORY AND LATIN.

PROF. PETRIE.

HISTORY.

In this department the aim is not so much to memorize facts as to understand them. Strong emphasis is laid on the fact that history is not a succession of isolated facts but a progressive whole, each event being at once the cause and the effect of other events. The students are taught to investigate the growth of ideas and institutions, the rise and progress of great historical movements and the reciprocal influence of men and circumstances. Frequent use is made of diagrams, photographs, charts and maps, with which the department is well equipped. Constant practice in map drawing is insisted on in order to give precision to the geographical knowledge acquired. Instruction is given by text-books, lectures and class discussion, but a constant effort is made to stimulate to wider reading and research in the library.

In the freshman class, the subjects studied are the United States and England. The first term (two hours per week) is devoted to the history of the United States, the second

term (two hours per week) to its government, and the third term (three hours per week) to the history of England.

TEXT-BOOKS.

Chambers's Larger History of the United States, Macy's Our Government, Montgomery's English History.

In the sophomore class (three hours per week until March) the subject studied is general history.

Text-Book: Myers's General History.

In the junior and senior classes (six hours each per week) opportunity for special historical work is given to those students in the general course who wish to elect it instead of laboratory work. Each student investigates under the direction of the professor selected topics, reports the results of his research to the class, and a general discussion follows. Thoroughness is insisted on. The trend of the work is toward a comparative study of government, but wide liberty of choice is allowed.

During the last term a course of lectures is given on the government of the leading nations of Europe.

A prominent feature of the work is frequent talks from men who are experts in some field of present or past history, on the institutions and customs of some country, or upon some geographical topic. These talks are informal and are followed by general discussion.

Some of the topics studied have been—

In the History of Government: The Origin of Government, The Growth and Influence of Roman Law, The Development of the English Parliament, The Present Governments of England and of France, Methods of Electing Presidents, The Australian Federation, Peculiarities of South American Republics.

In Great Movements: The Fall of the Roman Empire, The Rise of Mohammedanism, The Crusades, Feudalism, The Renaissance, Formation of the German Empire.

In Biography: Pericles, Cæsar, Charlemagne, Edward I, Elizabeth, Cromwell, Napoleon III, Gladstone, Bismarck.

In Contemporary Topics: Home Rule for Ireland, Rebellion in Brazil, Norway and Sweden, The House of Lords.

Text-book: Woodrow Wilson's State.

LATIN.

In this department two objects are kept in view: a knowledge of the language, and an appreciation of the literature.

In teaching the language the following methods are used: A systematic course is given in etymology and syntax. These are taught both deductively from a text-book on grammar and inductively from the Latin text read. Latin texts are translated, sometimes at sight, sometimes after being assigned for preparation. English passages based on a familiar author or illustrative of special constructions are translated into Latin orally and on the blackboard. Simple conversation is carried on in Latin.

Special emphasis is laid upon the subject of Latin literature. In connection with each author studied in class there is prescribed a course of reading in English descriptive of his life, writings and times. The artistic value of his writings is carefully studied and discussed, and frequent comparisons are made with modern writers.

TEXT-BOOKS.

Freshman class—Nepos, Virgil, Sallust, Grammar, Composition.

Sophomore class.—Cicero's Orations and Letters, Jones's Latin Prose Composition.

Junior class—Livy, Tacitus, Horace, Wilkins's Latin Literature, Collar's Practical Latin Composition, Miller's Latin Composition.

Senior class—Cicero's *De Natura Deorum*, Plautus, Terence.

AGRICULTURE.

PROF. BONDURANT.

The course of instruction in this department embraces: I, Soils; II, Plants; III, Domestic Animals.

The freshman class is taught by lectures and text-books, during the third term of the session.

The subjects taught are the treatment of soils, their classification, defects and remedies, causes of diminished fertility, and the means used to protect them from waste and to restore fertility, and the theory and practice of surface and sub-drainage.

These subjects are treated with special reference to the different classes of soil in Alabama and the Southern States.

In the sophomore class, in addition to the discussion of the physical properties and treatment of soils, the methods of studying their defects and their remedies are also considered.

The sources of the important elements of plant food and their use upon different soils and plants, methods of saving and applying farm manures, making composts, proportioning and applying commercial fertilizers, the relation of plant growth to soil and atmosphere, terracing and grading land to prevent washing, plows and plowing, and in fact everything connected with tilling the soil, pass under review as foundation works.

Southern agriculture is then treated; the history, nature and cultivation of field crops discussed as regards their adaptation to and treatment upon the soils of the Southern States.

Attention is also given the raising of stock, horses, sheep, swine and other animals, and to the proper feeding of dairy, beef cattle, and all farm stock.

In the junior class instruction is given in pomology, including the propagation of nursery stock, planting, manuring, pruning, cultivating, harvesting and marketing every species of fruit.

Lectures are delivered to this class upon subjects relating to agriculture, namely: a thorough and judicious system of rotation of crops, diversified farming, the selection, purchase, equipment and management of the farm, employment and management of labor.

Landscape gardening is also taught with special reference to the improvement of country houses.

Drawings and models of agricultural implements and farm products are used to illustrate the subjects treated in the lectures.

Reference will be made to suitable agricultural books, and especial reference to the experiments contained in bulletins of other agricultural stations, whenever applicable to the subject under discussion. In this department practical agriculture is combined with class instruction. Opportunities are given, and students are required, in the junior and sophomore classes to do practical field work of an educational character, under the direction of the professor.

The farm instruction will embrace the details of farm work, assisting in field and feeding experiments, which are conducted daily on the station farm, aiding in dairy work, care and management of farm stock, machinery, propagating fruits, grafting, budding, and pruning vines and fruit trees.

TEXT AND REFERENCE BOOKS.

(1) Winslow's Principles of Agriculture. (2) Gulley's Lessons in Agriculture. (3) Wrightson's Principles of Agricultural Practice. (4) Fream's Soils and their Properties. (5) Webb's Agriculture. (6) Norton's Elements of Scientific Agriculture. (7) Stewart's Irrigation for the Farm, Garden and Orchard. (8) Griffith on Manures. (9) Harris on Manures. (10) Mill's Silos and Ensilage. (11) Allen's American Cattle. (12) Willard's Practical Dairy. (13) Black's Cultivation of Fruits. (14) Thomas's Cultivation of Fruits. (15) Strong's Cultivation of Fruits. (16) Fuller's Grape Culturist.

MODERN LANGUAGES.

PROF. C. H. ROSS.

The following regular courses are given in French and German :

French—First Year : Three recitations a week. During this year the principal object is to acquire a thorough knowledge of the elements of grammar, and a correct pro-

nunciation, together with facility in translating ordinary French. Reading is begun at an early stage, and the principles of grammar are illustrated and impressed by frequent exercises in rendering English into French.

Second Year: Three recitations a week. During this year, almost the same line of work is pursued as that begun in the previous year. More difficult and varied French is read, and careful instruction is given upon the laws of grammar, the construction of the language, and the history of the literature.

German—Two Years: Three recitations a week the first year, three a week the second year. In this course the aim and the methods are similar to those in French.

Post-graduate courses in French and German are offered. That in French during the past year consisted of a study of Molière; that in German of a study of Heine and Lessing.

TEXT-BOOKS.

French—First Year: Whitney's Brief French Grammar and Introductory French Reader, Jules Verne's Michel Strogoff, Sand's La Mare au Diable, Lamartine's Jeanne d'Arc.

Second Year: Moliere's Le Bourgeois Gentilhomme, Corneille's Le Cid, Sainte Beuve's Causeries du Lundi, Feuillet's Le Roman d'un Jeune Homme Pauvre, Bowen's Modern French Lyrics, Hugo's Hernani, Saintsbury's Primer of French Literature.

Post-graduate Course: Les Precieuses Ridicules, Le Medecin Malgre Lui, Le Bourgeois Gentilhomme, Le Tartuffe, L'Avare, Les Femmes Savantes, Le Misanthrope, L'Ecole des Femmes, La Malade Imaginaire, Les Fourberies de Scapin; Oliphant's Moliere; Saintsbury's Short History of French Literature.

German—First Year: Otis's Elementary German, Grimm's Kinder-und Haus-Maerchen, Hauff's Das Kalte Herz, *Germania*

Second Year: Schiller's Ballads, Heine's Prosa, Goethe's Hermann und Dorothea, Lectures on German literature.

Post-Graduate Course: Heine's Gedichte, Die Romantische Schule, and Englische Fragmente; Sharp's Heine, Stigand's Heine; Lessing's Minna von Barnhelm, Nathan der Weise, and Laokoon; Rolleston's Lessing; Scherer's History of German Literature.

ELECTRICAL ENGINEERING.

PROF. MC KISSICK.

The students in this course will study English, French, or German, physics, mathematics, &c., as now prescribed for the course of civil engineering in the junior and senior years; and in addition thereto, will prosecute their studies in electricity and mechanics, as herein prescribed.

COURSE IN ELECTRICAL ENGINEERING.**JUNIOR YEAR.**

Five hours a week for the entire session are devoted to the study of the principles of electricity and magnetism. The student is made familiar with the theoretical principles by experiments, illustrations, recitations, and lectures.

LABORATORY WORK.—Six hours per week are given to work in the laboratory. This includes management of batteries, construction of instruments, electrical measurements, verification of the principles upon which the measurements of currents, electromotive force and resistance are based, etc.

TEXT-BOOKS.

Ayrton's Practical Electricity, Desmond's Electricity for Engineers, S. P. Thompson's Electricity and Magnetism, Stewart and Gee's Practical Physics.

SENIOR YEAR.

In the senior year five hours per week are devoted to theoretical instruction in electricity and magnetism, supplemented by a course of lectures and practical demonstrations on the applications of electricity to lighting, electrical transmission of energy, electrical welding, telegraphy and telephony.

Encouragement is offered to advanced students for conducting original investigations, and opportunity is taken to stimulate a spirit of scientific inquiry. Courses of reading are suggested to such students in connection with their experimental work.

LABORATORY WORK.—Six hours per week are devoted to practical laboratory work, including construction of instruments, electrical measurements, electrolysis, and relation of electrical currents to heat and mechanical work, care and tests of dynamo, the adjustment and calibration of voltmeters and ammeters, electric lighting, management and care of accumulators, energy consumed in lamps, adjustment and care of arc lamps, proper wiring of buildings, the application of electricity to street railways, magnetic measurements, tests of transformers and motors.

DRAWING AND CONSTRUCTION.—Five hours per week in the senior year are devoted to the design and construction of electrical machinery. The student is required to make original designs of dynamos, motors, transformers, galvanometers, etc.

TEXT-BOOKS.

Slingo and Brooker's *Electrical Engineering*, Thompson's *Dynamo Electric Machinery*, Fleming's *Alternate Current Transformer*.

REFERENCE BOOKS.

Treatise on Electricity and Magnetism, Vols. I and II, by Gordon; Electricity and Magnetism, by Clerk Maxwell; Emtage's *Introduction to the Mathematical Theory of Electricity and Magnetism*; Kempe's *Electrical Testing*; Dredge's *Electric Illumination*, Vols. I and II; *Dynamo Electric Machinery*, by Carl Hering; *The Electro-Motor and its Applications*, by Wetzler and Martin; *Electric Transmission*, by Kapp; *Electric Lighting*, by Atkinson; *Electric Light Installations*, by Salomons; *Alternating Currents of Electricity*, by Blakesley; *London Electrician*; *Proceedings of American Institute of Electrical Engineers*; *Thompson's Electro-Magnet*.

EQUIPMENT.

The electrical laboratory has a complete line of batteries, call-bells, annunciators, telegraph sounders, relays, keys, magnets, and all apparatus necessary for first year students in electrical engineering. The equipment comprises many fine instruments of precision: Sir Wm. Thomson's standard 100 ampere balance (either for direct or alternating currents); Sir Wm. Thomson's graded current galvanometer, reading to 600 amperes; also, his graded potential galvanometer, reading to 600 volts, Cardew voltmeter (for direct or alternating cur-

rents), reading to 150 volts; Weston's standard ammeter and voltmeter, box of resistance coils; Queen's magnetic vane voltmeter, and ammeter, standard $\frac{1}{3}$ micro-farad condenser and Sabine key; Thompson watt-meter ballistic reflecting galvanometer, mirror galvanometer, Fein ammeter and voltmeter, Ayston & Perry ammeter, Kohl's solenoid ammeter, Wood ammeter, Deprez ammeter, Hartman & Braun voltmeter, D'Arsonval galvanometer, Hughe's induction balance, tasimeter, microphone, telephones, electrolytic apparatus and several minor and other galvanometers for first year students. A battery of fifty-five Julien accumulators has been installed in the laboratory, and a like battery in the department of botany and geology.

In the dynamo room the following are installed: One Weston 150 volt, 20 ampere dynamo, with rheostat; one Brush 6 arc-light dynamo, with regulator and six lamps; one Edison compound wound 12 kilowatt generator; a Thompson-Houston 110 volt, 75 ampere generator; a Crocker-Wheeler one-horse power motor and rheostat, and one alternator, and 500 volt generator, made by special students, furnish current to laboratory, and light up the different buildings.

The dynamos occupy a separate brick building, 50 x 32 feet, and are operated by a 35 horse-power Westinghouse vertical engine, and a 25 horse-power Atlas engine.

This department, being provided with Sir Wm. Thomson's standard electrical instruments for exact measurements, will calibrate, free of expense, any ammeter or voltmeter that may be sent to the College.

An electro-motor made by students, supplied with current from a generator at a distance of 3,000 feet, operates a gin, gin press, silo cutter and feed cutter at the experiment station farm. This motor not only subserves a useful purpose in the operation of these machines, but is an excellent illustration of the electric transmission of power

MECHANICAL ENGINEERING AND MECHANIC ARTS.

PROF. WILMORE.

B. H. CRENSHAW,	} ASSISTANTS.
R. J. TRAMMELL,	

The course in manual training covers three years as follows: First year, wood-working—carpentry and turning; second year, pattern-making and foundry and forge work—moulding, casting and smithing; third year, machine shop—chipping, and filing and machine work in metals.

This course is obligatory upon the students of the three lower classes. For satisfactory reasons a student may be excused from this laboratory work by the faculty.

The full work of each class is six hours per week, in three exercises of two hours each.

The power for running the apparatus in this department is derived from a twenty-five horse-power Harris-Corliss automatic engine, which is supplied with steam by a thirty horse-power steel horizontal tubular boiler. A steam pump and a heater for the feed water form a part of the steam apparatus. For the steam plant a substantial brick boiler-house and chimney have been erected.

The equipment for the wood-working shop comprises the following: 30 wood-working benches, each with complete set of carpenter's tools; 24 turning-lathes, 10 inch swing, each with complete set of tools; 1 double circular saw; 1 hand saw; 1 board-planing machine; 1 buzz planer; 2 scroll saws (power); 1 large pattern-maker's lathe, 16-inch swing; 1 36-inch grindstone. In addition to these, the tool room is supplied with a variety of extra hand-tools for special work.

The equipment for the foundry consists of moulding-benches for 18 students, each supplied with a complete set of moulder's tools; a 14-inch cupola, with all modern improvements, capable of melting 1,000 pounds of iron per hour; a brass furnace in which can be melted 100 pounds of brass at a heat, with a set of crucible tongs, etc. Also a full supply of ladles, large and small moulding flasks, special tools, etc.

The forge shop equipment consists of 16 hand forges of new pattern, each with a set of smith's tools, anvil, etc. The blast for all the forges is supplied by a No. 3 Sturtevant steel pressure blower (which also furnishes blast for the foundry cupola), and a No. 15 Sturtevant exhaust blower draws the smoke from fires into the smoke-flues and forces it out through the chimney.

The machine department occupies a brick building, 30 x 50 feet, and is equipped with 6 engine lathes (screw-cutting), 14-inch swing, 6-foot bed; 2 engine-lathes, 16-inch swing (one with taper attachment); 1 engine-lathe, 18-inch swing, with compound rest and taper attachment; 1 screw cutting lathe, 12-inch swing; 1 speed lathe, 10-inch swing; 1 20-inch drill press (power-feed); 1 10-inch sensitive drill; 1 15-inch shaper; 1 22-inch x 22-inch x 5 foot friction planer; 1 universal milling machine; 1 corundum tool-grinder (14-inch wheel); 1 bench grinder; 1 post drill press (14-inch); 1 Brown & Sharpe universal grinding machine; 1 power hack saw. A part of this room is set apart for vise-work, chipping and filing; and benches for 12 students are provided, each with vise and sets of files, chisels, hammers, etc. In the tool-room is to be found a good supply of machinists'

tools for general shop use, such as lathe and drill chucks, drills, reamers, taps, dies, gauges, files, cutting and measuring tools, and special appliances for machine work, with machine for grinding twist drills.

The nature of the work in each department is as follows :

FIRST YEAR.

I. A course of carpentry (hand work covering the first two terms and part of the third, or about five months).

The lessons include instruction on the nature and use of tools, instruction and practice in shop drawing, elementary work with plane, saw, chisel, different kinds of joints, timber-splices, cross joints, mortise and tenon, mitre and frame work, dovetail work, comprising different kinds of joints used in cabinet making, light cabinet work, examples in building, framing, roof-trusses, etc.

II. A course in turning, extending through the third term. The lessons comprise nature and use of lathe and tools, plain straight turning caliper work to different diameters and lengths, simple and compound curves, screw plate and chuck work, hollow and spherical turning.

SECOND YEAR.

I. A course in pattern-making, covering the first term. The work includes a variety of examples of whole and split patterns, core work, etc., giving the students familiarity with the use of patterns for general moulding.

II. A course in moulding and casting in iron and brass occupying six weeks. The work consists for the most part of small articles, such as light machine parts, but a sufficient variety of forms are introduced for the student to acquire a good general and practical knowledge of the usual methods and appliances used in light foundry work. Most of the work is in green sand in two part flasks ; core work is also given, and some three part flask and some dry sand work is introduced.

The same patterns that have been previously made by students are used, besides special patterns for occasional larger or more complicated work. Instruction and practice is given in working the cupola, each student in turn taking charge of a melting.

III. A course in forge work in iron and steel, occupying the remainder of the year. The lessons are arranged so that the students, in making the series of objects, become familiar with the nature of the metals and the successive steps in working them by hand into simple and complex forms, as drawing, upsetting, bending, cutting, punching, welding by various methods, tool-forging, tempering, hardening, etc.

In connection with this second year work, a series of lectures is given on the metallurgy and working of the metals used in the industrial arts, cast and wrought iron, steel, brass, etc.

THIRD YEAR.

I. A course of chipping and filing, covering ten weeks of the first term. The lessons comprise work on cast and wrought iron; chipping to line on flat and curved surfaces, key-seating, etc.; filing and finishing to line (straight and curved), surface filing and finishing, fitting, slotting, dovetail work, sliding and tight fits, sawing, pin, screw and key filing, surface finishing with scraper, etc.

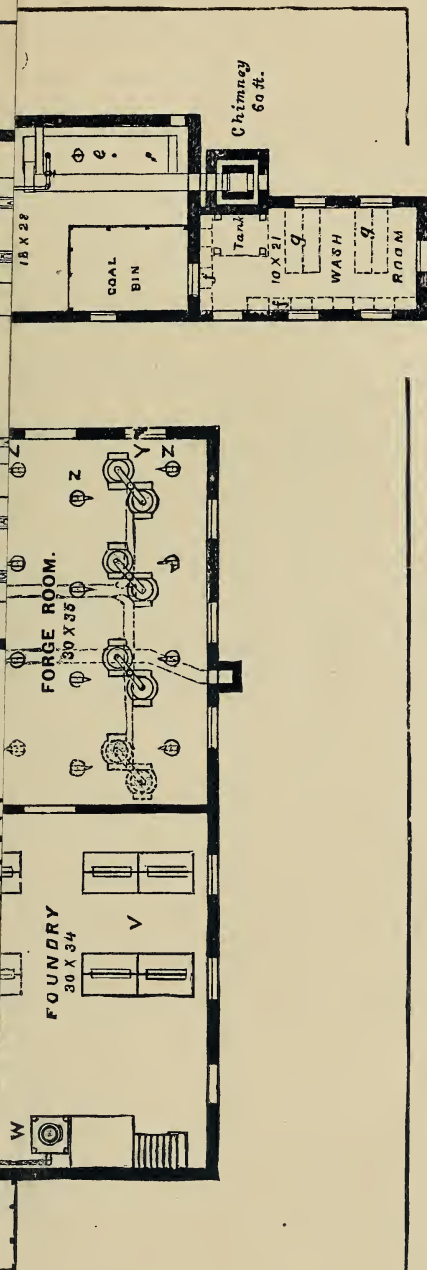
II. Machine work occupying the remainder of the year. The work includes cast and wrought iron, steel and brass; turning to various diameters and lengths, taper turning, facing with chuck and face plate, drilling—both in lathe and drill press,—reaming, boring, screw-cutting in lathe and with taps and dies, planing, slotting, etc., with planer and shaper, milling various forms with milling machine, including exercises in making taps, reamers, etc., fitting, grinding, polishing, etc.

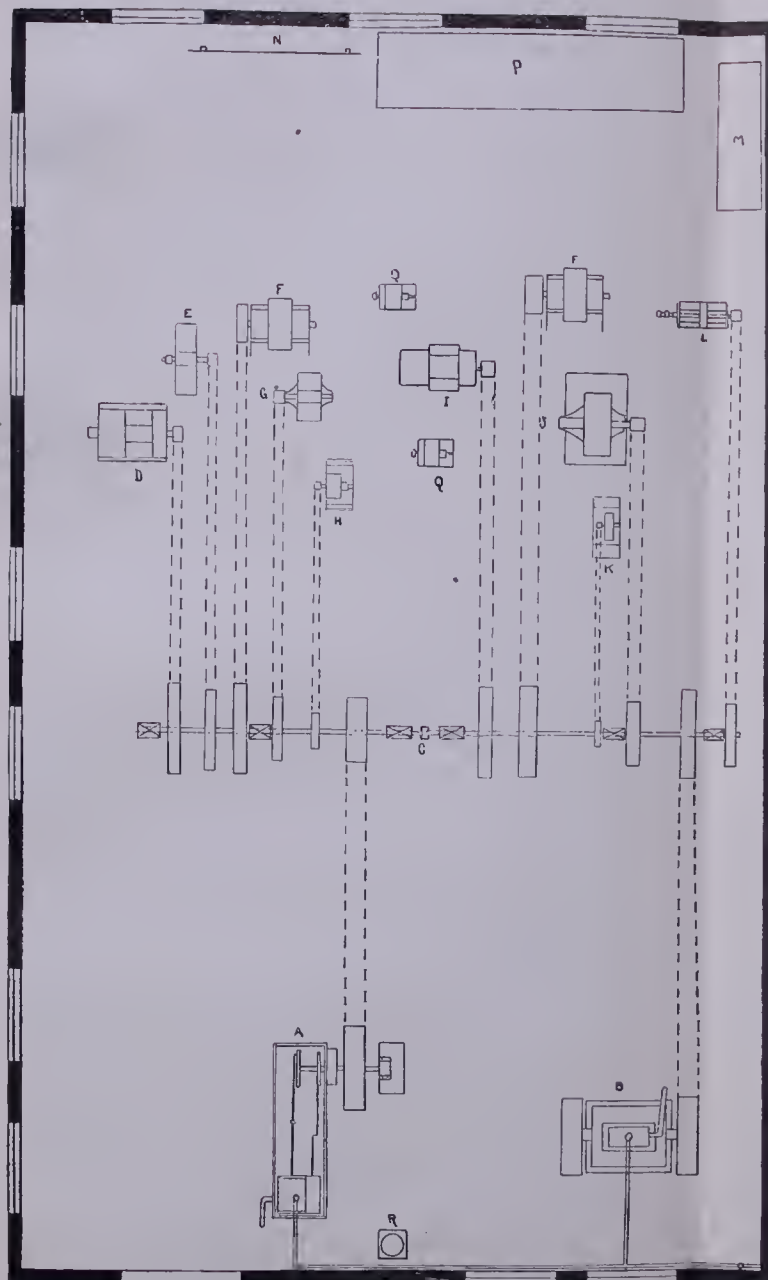
Lectures are also given during the year on various subjects connected with machine work in metals, such as forms, construction and

PLAN OF LABORATORY

OF

MECHANIC ARTS





PLAN OF
LABORATORY OF ELECTRICAL ENGINEERING,
ALABAMA POLYTECHNIC INSTITUTE
SCALE, 1-8"=1'.

*INDEX

- | | |
|-------------------------|-----------------------|
| A—Atlas Engine. | I—Thompson-Houston |
| B—Westinghouse | Motor. |
| C—Clutch Coupling | J—500 Volt Generator. |
| D—Edison Generator. | K—Series Dynamo. |
| E—Weston Generator. | L—Brush Arc Dynamo. |
| F—Motor-Generator. | M—Instrument Case. |
| G—Two-Phase Alternator. | N—Switch Board. |
| H—Crocker-Wheeler | O—Steam Separator. |
| Motor. | P—Work Table. |
| | Q—Two Phase Induction |
| | Motors. |
| | R—Oil Filter. |

PLAN OF LABORATORY OF ELECTRICAL ENGINEERING.

use of the various machines, cutting tools, gearing, gauges, screw threads, etc. During the last term some piece of construction work is given the classes.

Instruction is generally given, first, by blackboard drawings or sketches which the student copies, with dimensions in note-book, with which each one provides himself; thus each one works from his own notes. This is supplemented, whenever necessary, by the actual construction of the lesson by the instructor before the class, second by inspection and direction at the bench by the instructor. The construction work is made from blue prints, the work of the class in drawing.

MECHANICAL ENGINEERING.

PROF. WILMORE.

JUNIOR YEAR.

To receive the degree of B. Sc. in electrical and mechanical engineering the student must complete the course of mechanical engineering as here described.

Principles of Mechanism.—Two recitations per week during the year are devoted to this subject. Under this head machines are analyzed and their elementary combinations of mechanism studied. The communication of motion by gear-wheels, belts, cams, screws and link-work, the different ways of obtaining definite velocity ratios and definite changes of velocity, parallel motions and quick return motions as well as the designing of trains of mechanism for various purposes, together with the theoretical forms of teeth for gear-wheels to transmit the motion through these trains, are investigated under this subject. The text-book work is illustrated by the study and examination of the machines in the laboratory.

Mechanical Drawing.—During the first term the students make drawings, to exact scale, of some of the simpler machines. The student takes his own measurements and makes his own sketches from which to produce the finished drawing.

This is followed by work intended to be supplemental to

the work in mechanism. Involute and epicycloidal gear wheels, bevel wheels and endless screws are designed and drawn to scale from data given by the instructor. During the last term each student will make working drawings of some machine in the laboratory with instruction in the making of tracings and the art of blue-printing.

Laboratory Work.—The laboratory work will consist of hand work in iron and machine work in iron, as given in the course in mechanic arts in the third year.

SENIOR YEAR.

Steam Engine.—One-half the year will be given to the study of the theory and efficiency of the steam engine, with discussions of the effects of condensation in cylinder, action of fly-wheels, effects of jacketing, etc. Simple and compound engines, various valves and cut-off motions, and the principal types of modern engines are studied. Special attention is given to the steam engine indicator, and the student is expected to become familiar with its application and uses.

Machine Design.—In the last half of the year the subject of machine design will be taken up and carried on in connection with the strength of materials, the latter being studied mainly from actual experiments made on the testing machine. In the former simple machines are given to work under specified conditions, the motions being laid out and the proportion of parts found by calculation.

Laboratory Work.—The laboratory work will consist of making tests of engines under varying conditions of load and speed. These results will be carefully recorded, tabulated and filed away for future reference. Also of making tests of the strength of the different materials of construction, stone, wood, cast and wrought iron, steel, etc. These will be tested for transverse, tensional and compressional strains, and all results recorded and tabulated.

POST-GRADUATE COURSE.

Students sufficiently qualified that desire post-graduate work, can be accommodated to the extent of the appliances at hand. They will be expected to study up the history and development of mechanics and engineering, take more in detail the theory and structure of the steam engine, and solve problems in general engineering, such as designing shops for special lines of work, making drawings and specifications showing the most economical arrangement of machines and transmission machinery.

TESTING APPARATUS.

For the experimental work in mechanical engineering the following apparatus has been provided:

A testing machine, capable of exerting compressional, tensional and transverse strains up to 35,000.

A steam engine indicator, planimeter, micrometer and other implements for steam engine testing.

A Harris-Corliss twenty-five horse-power engine, a Westinghouse thirty-five horse-power engine, a steam pump, steam boilers, and the use of the laboratory for special work.

TEXT AND REFERENCE BOOKS.

Stahl and Wood, *Elementary Mechanism*; Goodeve, *Steam Engine*; Busbridge, *Engineering Drawing Copies*; Barr, *Treatise on High Pressure Steam Boilers*; Brown & Sharpe, *Treatise on Gearing*; Davidson, *Practical Perspective*; Grant, *Odontics*; Hemenway, *Indicator Practice and Steam Engine Economy*; Klein, *Machine Design*; MacCord, *Treatise on the Slide Valve*; Pray, *Twenty Years with the Indicator*; Rose, *Mechanical Drawing Self-taught*; Rose, *Modern Steam Engines*; Thurston, *Manual of the Steam Engine*; Appleton's *Cyclopædia of Applied Mechanics*.

MILITARY SCIENCE AND TACTICS.

LIEUT. J. H. WILLS, U. S. ARMY, COMMANDANT.

Military science and tactics are required by law to be taught in this institution. This law is faithfully carried out by imparting to each student, not physically incapacitated

to bear arms, practical instruction in the school of the soldier, of the company and of the battalion; also in guard mountings, inspections, dress parades, reviews, etc.

Under section 1225, U. S. Revised Statutes, the College is provided with modern cadet rifles and accoutrements and two pieces of field artillery. Ammunition for practice firing is used under the direction of an experienced officer. The exercises in target practice and artillery drill begin the first day of the third term, March 27th.

The following uniform of standard cadet gray cloth has been prescribed for dress, viz.: Coats and pants as worn at West Point, with sack coat for fatigue, dark blue cadet cap. A neat and serviceable uniform can be obtained here at \$17 to \$18. This is less expensive than the usual clothing. All students are required to wear this uniform during the session.

The entire body of students is divided into companies. The officers are selected for proficiency in drill, deportment, and studies. Each company is officered by one captain, two 1st lieutenants, one 2d lieutenant, and with a proper number of non-commissioned officers. The officers and non-commissioned officers are distinguished by appropriate insignia of rank. These appointments are confirmed by the President on nomination of the Commandant.

The junior class recites once a week in the United States Infantry Tactics.

The senior class recites once a week in "Notes on Military Science."

PHYSIOLOGY AND VETERINARY SCIENCE.

PROFESSOR CARY.

PHYSIOLOGY.

The sophomore class during the second and third terms study human physiology.

It is the aim of the department to familiarize the student with the gross anatomy and the functions of the various

parts of the human body; moreover, due attention is given to the laws of health or conditions most favorable to a healthy action of the organs of the human body.

Instruction is given by lectures which are illustrated by charts, drawings, models of the organs of the body and by a human skeleton.

The department is now supplied with rooms where the students can dissect some of the smaller animals and thus see the organs, tissues and regions as exhibited in a few of the lower animals.

VETERINARY SCIENCE AND ART.

During the entire junior and senior years the students in the agricultural and chemical course of study devote to this work two hours per week in the class room and three to five hours per week in clinical practice.

The lectures are arranged with special reference to the students who are interested in horses or other domestic animals; also to those students who contemplate studying human or veterinary medicine. While it is not the aim to give a complete course in veterinary medicine, we attempt to present the general principles of comparative medicine with such special applications as are adapted to the conditions and wants of the students.

Special attention is given to the exterior anatomy of the horse, while comparative anatomy is presented mainly in connection with the study of the diseases of the different apparatus of the horse or other domestic animals.

Lameness in the horse, minor surgery, the actions and uses of the most common medicines, the principles and practice of comparative medicine, the methods of meat inspection, and the ways of protecting the health of man and domestic animals, are considered in as plain and practical manner as the time allotted to such subject will permit. Post mortem examinations and the dissection of domestic animals are used as object lessons in the study of general pathology and anatomy.

To the post-graduate student this department furnishes work in bacteriology and pathology.

The department of physiology and veterinary science is now located in a new building which consists of a two-story portion, containing four laboratory rooms on the second floor and a lecture room, museum and office on the lower floor; and a one-story part which contains an operating room and a hospital ward with two box stalls and four open single stalls.

The building is supplied with water. The museum contains the skeletons of the horse, the ox, the sheep, and the hog, and a human skeleton. It also contains anatomical models of the various parts and organs of the human body and models of many parts of the horse, the ox, and the other domestic animals. It also contains a collection of pathological and anatomical specimens, and one of animal parasites.

The cases for clinical work have been numerous. During 1893 there were two hundred and eighty-seven cases handled by the department.

POST-GRADUATE DEGREES.

The Post-graduate Degrees are—MASTER OF SCIENCE, MINING ENGINEER, CIVIL ENGINEER, and ELECTRICAL and MECHANICAL ENGINEER.

A post-graduate degree may be obtained by a graduate of this College, or of any other institution of equal grade, by one year's residence at the College, spent in the successful prosecution of a course of study approved by the faculty.

Candidates must also present to the faculty a satisfactory thesis, showing independent investigation upon some subject pertaining to their course, and must pass an examination at the close of each term on the course of study prescribed, in which he must attain a grade of 75 per cent. The examination is written, and also oral in the presence of the faculty.

Applicants for post-graduate degrees are, by order of the trustees, permitted to matriculate without payment of fees

They are subject to the general regulations as other students, but are exempt from all military duty.

Resident graduates that are not candidates for a degree, are permitted to matriculate and prosecute the studies in any department of the College, without payment of regular fees.

The following courses are prescribed for the degrees named :

Mining Engineer.—Geology, Civil Engineering, Chemistry.

Civil Engineer.—Civil Engineering, Mathematics, Analytical Mechanics.

Electrical and Mechanical Engineer.—Electrical Engineering, Mechanical Engineering, Analytical Mechanics or Mathematics.

Master of Science.—Studies in three departments, in two of which the candidate must have previously completed the full course of the senior class.

A certificate of proficiency will be given when any one subject of a post-graduate course is satisfactorily completed.

DISTINCTIONS.

Distinctions are awarded in the different subjects of each class to those students whose grade for the entire year is above 90 per cent.

Certificates of Distinction are awarded in public on commencement day to those who obtain an average of 90 per cent. in all the prescribed studies of a regular class; and also to those who obtain three distinctions in the freshman class, four in the sophomore class, five in the junior class, and six in the senior class, provided they have satisfactorily passed all the regular examinations of that session, and have not received forty demerits during the year.

PHOTOGRAPHY.

During the first term there will be given by Professor Mell a course of twelve lectures on photography. This course will be elective, and the instruction will be open to any student that may desire to learn how to make pictures. It will be necessary for each student to provide himself with an outfit that will cost from \$11.50 to \$16.00.

RECORDS AND CIRCULARS.

Daily records of the various exercises of the classes are kept by the officers of instruction.

From the record a monthly circular, or statement, is sent to the parent or guardian.

EXAMINATIONS.

Written monthly examinations on the studies of the month are held by each professor.

At the end of each term written examinations, or written and oral, are held on the studies passed over during that term.

Special examinations are held only by order of the faculty, and in no case will private examinations be permitted.

Students falling below the minimum grade at the final examination, can be promoted to full standing in the next higher class; only on satisfactory examinations at the opening of the next session.

It is required that every student who enters the College shall re-

main through the examinations at the end of the term. Leaves of absence and honorable discharges will, therefore, not be granted within three weeks of the examination, except in extreme cases.

LIBRARY.

The library occupies an elegant, well-lighted room in the main building, and also two smaller adjacent rooms. It contains about 8,000 volumes, including valuable reference and scientific books, with select editions of standard authors, and others suitable for students carefully and recently selected. It is kept open eight hours daily for the use of students as a reading-room, and is thus made an important educational feature

MUSEUM.

The museum occupies a large room in the third story. It is provided with suitable cases and is gradually becoming equipped with valuable specimens and models of an instructive character.

DISCIPLINE.

The government of the College is administered by the President and faculty, in accordance with the code of laws and regulations enacted by the trustees.

Attention to study and punctuality in attendance on recitations and all other duties, are required of every student. Students are prohibited from having in their possession arms or weapons not issued for the performance of military duty, and also from using, or causing to be brought into the College limits, intoxicating liquors.

MILITARY DRILL.

There are three regular military drills each week, and all undergraduate students, not physically incapacitated to bear arms, are required to engage in these exercises.

The drills are short, and the duty involves no hardships. The military drill is a health-giving exercise, and its good effects in the development of the *physique* and improvement of the carriage of the cadet are manifest.

Privates of the senior class who are candidates for graduation may be excused by the President from all military drills, and also students over twenty-one years of age at the time of entering College that are permitted to devote their time to one special study, as chemistry, agriculture, etc.

RELIGIOUS SERVICE.

Religious services are held every morning in the chapel.

All students are required to attend these exercises, and also to attend the church of their choice at least once on Sunday.

Opportunities are also offered for attending Bible classes every Sunday.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

This Association is regularly organized, and through its weekly meetings exerts a wholesome Christian influence among the students of the College.

The first week of the session the trains will be met by a committee of the Association, whose business will be to give information to, or assist in any way it can, the students entering College for the first time. The Association is commended to all the students.

The following are the officers :

J. A. DUNCAN, President.

H. H. SMITH, Vice-President.

W. H. McBRYDE, Recording Secretary.

S. L. COLEMAN, Corresponding Secretary.

W. D. CLAYTON, Treasurer.

GYMNASIUM.

The fourth floor of the main building is one large attic room, well lighted and ventilated. It has been supplied with a number of such appliances as are used in a gymnasium, and is used for athletic exercises by the students, in the afternoon, under prescribed regulations

LOCATION.

The College is situated in the town of Auburn, fifty-nine miles east of Montgomery, on the line of the Western Railroad.

The region is high and healthful, noted for its general good health and freedom from malaria, having an elevation of eight hundred and twenty-six feet above tide water. By statute of the State, the sale of spirituous liquors and keeping saloons of any kind are forbidden.

BOARDING.

The College has no barracks or dormitories, and the students board with families in the town of Auburn, and thus enjoy all the protecting and beneficial influences of the family circle.

For each house an inspector is appointed, whose duty it is to report those who, without permission, leave their rooms after "call to quarters," or are guilty of any violation of order. The report of the inspector is made to the Commandant on alternate days of the week.

Students, after selecting their boarding-houses, are not permitted to make changes without obtaining permission from the President, and this permission is given only at the close of a term, except for special reasons.

EXPENSES.

Incidental fee, per half session	\$ 2 50
Library fee, per half session.....	1 00
Surgeon's fee, per half session.....	2 50
Board, per month, with fuel and lights.....	\$12 to 15 00

These fees are payable, \$6.00 on matriculation and \$6.00 on February 1st. By order of the trustees no fees can be remitted.

There is no charge for tuition.

For students entering after January 1st, the fees for a half session only are required.

EXPENSES FOR COLLEGE YEAR.

Fees.....	\$ 12 00 to \$ 12 00
Board, lodging, fuel and lights.....	108 00 to 135 00
Washing	9 00 to 9 00
Books, etc., say.....	8 00 to 15 00
Total.....	\$137 00 \$171 00

UNIFORM.

A uniform of cadet gray cloth is prescribed, which all under-graduate students are required to wear during the session. The uniforms are made by a contractor of excellent cloth manufactured at the Charlottesville mills. The suit, including cap, costs about \$18.00. It is neat and serviceable, and less expensive than ordinary clothing.

CONTINGENT FEE.

A contingent fee of five dollars is required to be deposited by each student on matriculation, to cover any special or general damage to college property for which he may be liable.

At the close of the session the whole of the contingent fee, or the unexpended balance, is refunded to the student.

AMOUNT OF DEPOSIT.

Each student on entering College should deposit with the Treasurer not less than \$50.00, to pay the expenses of fees, one month's board, uniform, books, etc.

FUNDS OF STUDENTS.

Parents and guardians are advised to deposit with the Treasurer of the College all funds desired for sons or wards, whether for regular charges of College fees or board, or for any other purpose. It is the duty of this officer to keep safely all funds placed in his hands, and to pay all expenses incurred by the students, including board, uniform, books, etc., when approved.

When funds are deposited, checks are drawn on the Treasurer of the College by the cadet to pay his necessary expenses. These checks are paid only when approved by the President. This approval is given only for necessary expenses, as stated in the catalogue, unless specially requested in writing by the parent.

The College cannot be held responsible for the expenses of a student, unless the funds are deposited with the Treasurer. No student should be permitted to have a large amount of pocket money, as it brings only trouble and encourages idleness.

THESIS.

Each applicant for a degree is required to write and submit to the faculty an essay or oration and read or deliver the same at commencement, if required by the faculty.

It must be given to the Professor of English by the first of May.

LITERARY SOCIETIES.

There are two literary societies connected with the College—the Wirt and the Websterian. Each has a hall in the main building.

These societies hold celebrations on the evenings of Thanksgiving Day and 22nd of February, and also during commencement week. They elect annually, with the approval of the faculty, an orator to represent them at the close of the year.

EXERCISES IN ELOCUTION.

On every Saturday morning, immediately after chapel services, oratorical exercises in declamation and in original orations are conducted by the Professor of English, in presence of the faculty and students.

The *first and second terms* the students of the junior and sophomore classes are exercised in original orations and declamation.

The *second and third terms* the members of the senior class read essays or deliver original orations.

SOCIETY OF THE ALUMNI.

The annual alumni oration, is delivered by a member of the society, in Langdon Hall, on ALUMNI DAY, Tuesday of commencement week. The following are the officers of the society:

- T. D. SAMFORD, President.
- C. H. ROSS, Vice-President.
- C. C. THACH, Treasurer and Secretary.
- J. W. MORGAN, Orator for 1894.

SURGEON.

The Surgeon is required to be present at the College daily, to visit at their quarters the cadets that are reported sick, and to give all requisite medical attention without other charge than the regular surgeon's fee, paid on entering College.

ACADEMIC YEAR.

The academic year for 1894-95 commences on Wednesday, 12th September, 1894, (second Wednesday after first Monday), and ends on Wednesday, 12th June, 1895, (the second Wednesday after the first Monday), which is commencement day.

It is divided into three terms. The first term extends from the opening of the session to the 21st of December;

the second term begins January 1st, and ends March 23d; the third term continues from March the 25th to the close of the session.

RESOLUTION OF THE TRUSTEES.

The following resolution was adopted by the trustees:

That in view of increased facilities for instruction in agriculture and the technical departments of education now possessed by this College, especially in the department of mechanic arts, made possible by the recent donation from the State, the faculty are authorized, in addition to the legal name of this College, to print on the catalogue the words ALABAMA POLYTECHNIC INSTITUTE, as significant of the expanded system of practical instruction in industrial science in the course of education now provided for.

DONATIONS TO LIBRARY.

P. H. Mell—Mell's Manual for Parliamentary Practice.

Miss Kate Lupton—Fenelon: Education of Girls.

Miss Kate Lupton—N. T. Lupton: Elementary Principles of Scientific Agriculture.

C. H. Ross—C. H. Ross: Absolute Participle in Middle and Modern English.

Westinghouse Electric Co.—F. L. Pope: Evolution of the Electric Incandescent Lamp.

Secretary of Interior—Senate Executive Documents, House Executive Documents, Senate Miscellaneous Documents, House Miscellaneous Documents, Congressional Record, Memorial Addresses, etc.,—47 volumes.

Hon. W. C. Oates—War of the Rebellion Reports, 4 volumes.

DONATIONS TO ELECTRICAL AND MECHANICAL DEPARTMENTS.

Hornberger Electric Co., Elkhart, Ind.—Transformer.

Garton-Daniels Electric Co., Keokuk, Iowa—Lightning arrester.

Acme Oil Filter Co., St. Louis, Mo.—Oil Filter.

Pemberthy Injector Co., Detroit, Mich.—Injectors.

Eugene Munsell & Co., New York, N. Y.—Samples of micanite.

Ingersoll-Sargent Rock Drill Co., New York.—Rock drill.

Hancock Inspirator Co., Boston, Mass.—Hancock inspirators.

William Jessop & Sons, New York—Samples of steel.
 Westinghouse Air Brake Co., Pittsburg, Pa.—Air pump.
 Westinghouse Air Brake Co., Pittsburg, Pa.—Air brake and triple valve.

PERIODICALS.

The following periodicals are regularly received in the library and are accessible to students.

LITERARY.

QUARTERLY.

Economic Journal.	Quarterly Journal of Economics.
Edinburgh Review.	Quarterly Review.
Political Science Quarterly.	Sewanee Review.

MONTHLY.

Atlantic Monthly.	Fortnightly Review.
Blackwood's Magazine.	Forum.
Century Magazine.	Harper's Monthly.
Contemporary Review.	Nineteenth Century.
Cosmopolitan.	North American Review.
Eclectic Monthly.	Popular Science Monthly.
Education.	Review of Reviews.
Educational Review.	Scribner's Magazine.

WEEKLY.

Academy.	Nation.
Athenæum.	Saturday Review.
Harper's Weekly.	Spectator.

SCIENTIFIC.

American Journal of Science.
 American Naturalist.
 Annals des Sciences Naturelles.
 Annals of Mathematics.
 Around the World.
 Comptes Rendus.
 Engraver and Printer.
 Journal of Franklin Institute.
 Natural Science.
 Nature.
 Philosophical Magazine.
 Physical Review.

Proceedings of Academy of Natural Sciences and of Philosophy.
Science.
American Geologist.
Journal of Geology.
American Microscopical Journal.
Anatomisches Anzeiger.
Archives de Biologie.
Archives de Zoologie Experimentale.
Archives fuer Mikroskopische Anatomie.
Centralblatt fur Bakteriologie.
Der Hufschimmel.
Fleming's Veterinary Journal.
Journal de L'Anatomie et de la Physiologie.
Journal of Comparative Pathology and Therapeutics.
Journal of Morphology.
Journal of New York Microscopical Society.
Journal of Royal Microscopical Society.
Monthly Microscopical Journal.
Quarterly Journal of Microscopical Society.
Zeitschrift fuer Fleisch und Milch Hygiene.
Zeitschrift fuer Thiermedizin.
Zeitschrift fuer Vergleichende Augenheilkunde.
Zoologische Jahrbuecher.
Zoologisches Anzeiger.
Annals de Chemie et Physique.
Berichte des Deutsches Chemischen Gesellschaft.
Chemical News.
Journal of American Chemical Society.
Journal of Chemical Society of England.
Journal of Society of Chemical Industry.
The Analyst.
Zeitschrift fuer Analytische Chemie.
American Machinist.
Builder and Woodworker.
Cassier's Magazine.
Electrician.
Electrical Engineer.
Electrical Review.
Electrical World.
Engineering.
Engineering and Mining Journal.
Engineering News.
Sibley Journal of Engineering.
Annals of Botany.
Botanical Gazette.

Bulletin of Torrey Botanical Club.

Garden and Forest.

Journal of Botany.

Mehan's Monthly.

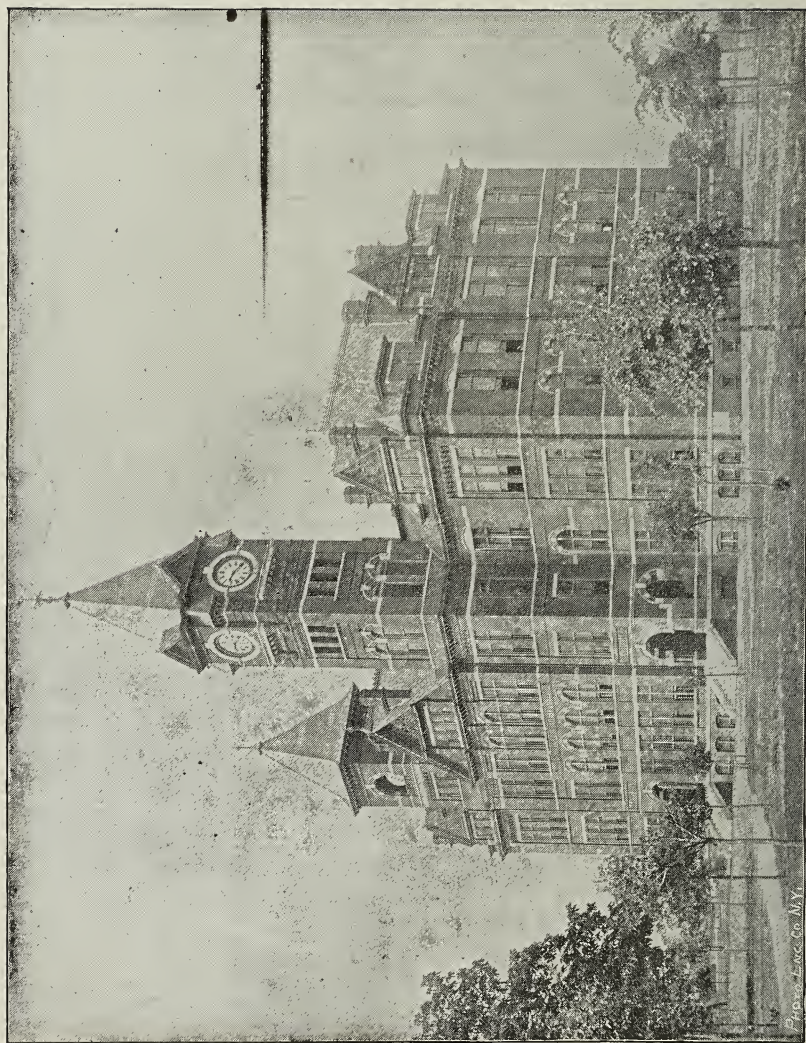
Memoirs of Torrey Botanical Club.

Pharmaceutical Journal.

Scientific American.

CALENDAR, 1894-95.

Session begins.....	Wednesday, Sept. 12, 1894
Examination for admission.....	Wednesday, Sept. 12, 1894
First term begins.....	Wednesday, Sept. 12, 1894
First term ends.....	Friday, Dec. 21, 1894
Second term begins.....	Tuesday, Jan. 1, 1895
Second term ends.....	Saturday, March 23, 1895
Third term begins.....	Monday, March 25, 1895
Sophomore class exercises.....	Wednesday, May 1, 1895
Final examinations begin.....	Wednesday, May 29, 1895
Commencement sermon.....	Sunday, June 9, 1895
Annual meeting of Trustees.....	Monday, June 10, 1895
Junior class celebration, 10 A. M.....	Monday, June 10, 1895
Military exercises, 4 P. M.....	Monday, June 10, 1895
Celebration of Literary Societies, 8 P. M.....	Monday, June 10, 1895
Alumni day.....	Tuesday, June 11, 1895
Military exercises, 5 P. M.....	Tuesday, June 11, 1895
Address before Literary Societies, 8 P. M.....	Tuesday, June 11, 1895
Commencement day.....	Wednesday, June 12, 1895



ALABAMA POLYTECHNIC INSTITUTE.
MAIN BUILDING.

CATALOGUE

OF THE

Alabama Polytechnic Institute.

STATE

AGRICULTURAL AND MECHANICAL

COLLEGE.

1894-95.

AUBURN, ALABAMA.

MONTGOMERY, ALA.:
ALABAMA PRINTING COMPANY.
1895.

TRUSTEES.

His Excellency WM. C. OATES, President. Ex-officio.
J. O. TURNER, Superintendent of Education.....Ex-officio.

JONATHAN HARALSON...(term expires 1901)..... Selma.
THOS WILLIAMS(term expires 1901).....Wetumpka.
J. A. BILBRO.....(term expires 1901).....Gadsden.

I. F. CULVER.....(term expires 1899).....Union Springs.
J. C. RICH(term expires 1899).....Mobile.
H. CLAY ARMSTRONG.. (term expires 1899) ... Auburn.
R. H. DUGGAR(term expires 1899).....Gallion.

J. G. GILCHRIST.....(term expires 1897)..... Hope Hull.
WM. SMAW.....(term expires 1897).....Boligee.
C. C. HARRIS.....(term expires 1897).....Decatur.

E. T. GLENN, Treasurer.

FACULTY AND OFFICERS.

WM. LEROY BROWN, M. A., LL. D.,
President and Professor of Physics and Astronomy.

OTIS D. SMITH, A. M.,
Professor of Mathematics.

P. H. MELL, M. E., PH. D.,
Professor of Botany and Geology.

JAMES H. LANE, C. E., A. M., LL. D.,
Professor of Civil Engineering and Drawing.

CHARLES C. THACH, A. M.,
Professor of English and Political Economy.

GEORGE PETRIE, M. A., PH. D.,
Professor of History and Latin.

LIEUT. J. H. WILLS, 22nd Infantry, U. S. A. (West Point),
Commandant and Professor of Military Science.

A. J. BONDURANT, A. M.,
Professor of Agriculture.

A. F. MCKISSICK, A. M.,
Professor of Electrical Engineering.

J. M. STEDMAN, B. S.,
Professor of Biology.

B. B. ROSS, M. Sc.,
Professor of General and Agricultural Chemistry and State Chemist.

CHARLES H. ROSS, C. E., PH. D.,
Adjunct Professor of Modern Languages and English.

J. J. WILMORE, M. E.,
Professor of Mechanical Engineering and Director of Laboratory.

C. A. CARY, B. Sc., D. V. M.,
Professor of Physiology and Veterinary Science.

B. H. CRENSHAW, M. E.,
Instructor in Mechanic Arts.

R. E. NOBLE, M. Sc.,
Instructor in Chemical Laboratory.

R. J. TRAMMELL, C. E.,
Assistant Instructor in Mechanic Arts.

L. W. PAYNE, JR., M. Sc.,
Assistant Librarian.

W. M. RIGGS, E. & M. E.,
Instructor Physical Laboratory.

J. V. BROWN, B. Sc.....Assistant in English and Mathematics.
R. C. CONNER, B. Sc.....Assistant in English.
J. A. DUNCAN, B. Sc.....Assistant in Mathematics.
C. G. GREENE, B. Sc.....Assistant in Botany and Biology.
W. W. MOORE, B. Sc.....Assistant in Mechanic Arts.
J. P. SLATON, B. Sc....Ass't in Civil Engineering and Drawing.
R. G. WILLIAMS, B. Sc.....Assistant in Chemistry.
L. S. BOYD, B. Sc.....Secretary and Assistant in Physics.

J. H. Drake, M. D.....Surgeon.
C. C. THACH ... Librarian and Recording Secretary.
O. D. SMITH.....Corresponding Secretary.

OFFICERS
OF THE
AGRICULTURAL EXPERIMENT STATION.

COMMITTEE OF TRUSTEES ON EXPERIMENT STATION.

I. F. CULVER.....Union Springs.
J. G. GILCHRIST.....Hope Hull.
H. CLAY ARMSTRONG.....Auburn.

STATION COUNCIL.

WM. LEROY BROWN.....President.
A. J. BONDURANT.....Agriculturist.
B. B. ROSS.....Chemist.
P. H. MELL.....Botanist.
J. M. STEDMAN.....Biologist.
C. A. CARY.....Veterinarian.

ASSISTANTS.

J. T. ANDERSON, PH. D.....First Assistant Chemist.
R. E. NOBLE, M. Sc.....Second Assistant Chemist.
C. L. HARE, M. Sc.....Third Assistant Chemist.
T. U. CULVER.....Superintendent of Farm.
W. B. FRAZER Farm Clerk.



OF THE **GROUNDS and EXPERIMENT STATION** **STATE AGRICULTURAL MECHANICAL COLLEGE**

—O—ALABAMA.

ENGINEERING DEPT.

MOBILE, ALA.

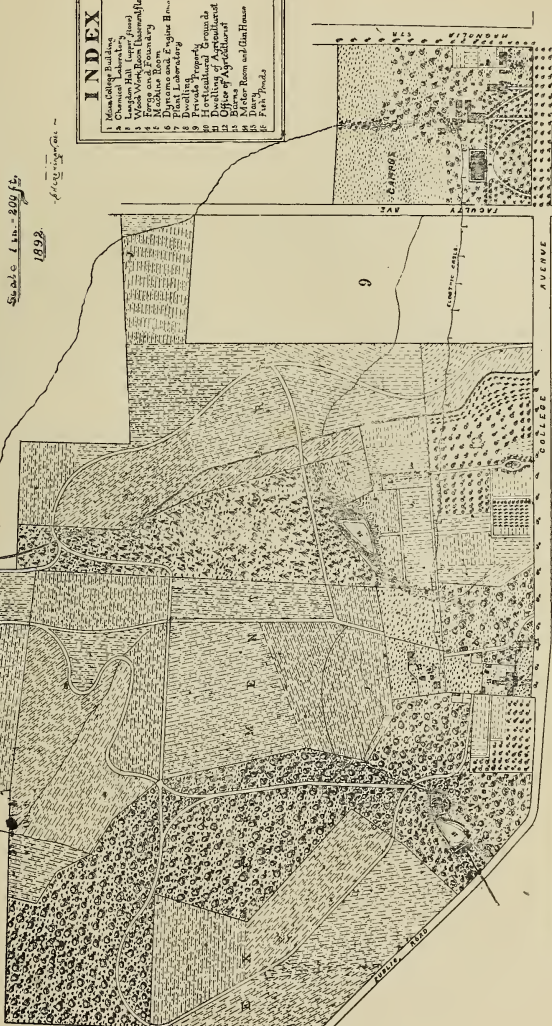
Scale 1 in. = 200 ft.

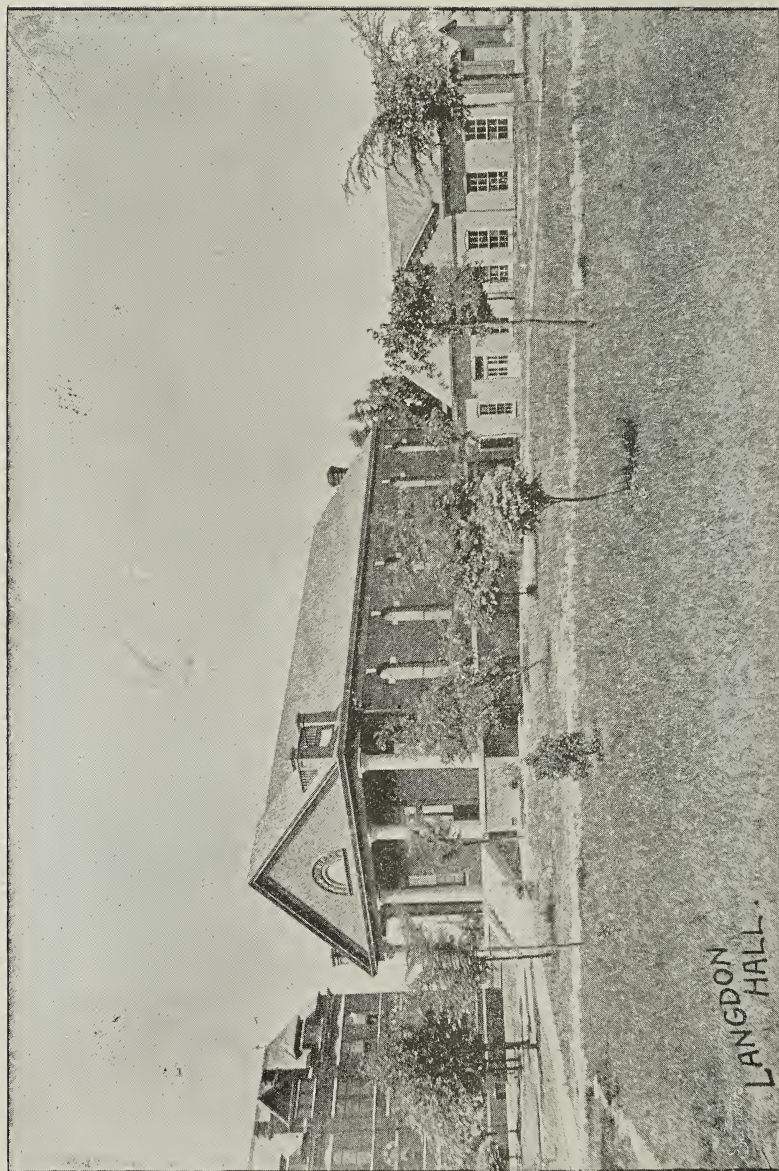
1892.

John H. H. H. H.

INDEX

- 1 Main College Building
- 2 Chemical Laboratory
- 3 Botanical Garden
- 4 Windmill (Barn)
- 5 Engine and Foundry
- 6 Blacksmith Shop
- 7 Dynamite and Engine House
- 8 Plant Laboratory
- 9 Private Property
- 10 Horticultural Grounds
- 11 Office of Agriculture
- 12 Office of Agriculture
- 13 Bureau of Agriculture
- 14 Director Room and Office
- 15 Fish Pond





OBJECT OF THE COLLEGE.

The leading object of the College, in conformity with the act of Congress and the acts of the State Legislature, is to teach the principles and the applications of science.

In its course of instruction it gives prominence to the sciences and their applications, especially to those that relate to agriculture and the mechanic arts; and at the same time the discipline obtained by the study of languages and other sciences is not neglected.

All students are required to study the English language. The Latin, French and German languages are also taught, and opportunity for their study is offered to students in any course.

The special or technical instruction given is thus based on a sound, general education.

The College, in fact, is a distinctive school of industrial science—or POLYTECHNIC INSTITUTE—a title which by resolution of the Trustees is permitted to be inscribed on the catalogue,—and work of great value to the youth of the State is now being accomplished by fitting them by a thorough science-discipline, in which manual training in the lower classes is made a prominent feature, for the successful and honorable performance of the responsible duties of life.

While every attention is given to the mental discipline of the students in endeavoring to train them to habits of accurate scientific thought, and thus to qualify them for the duties of life, their moral and Christian training will always constitute the prominent care and thought of the Faculty.

LABORATORIES AND FACILITIES FOR INSTRUCTION.

The College now possesses facilities for giving laboratory instruction in applied science in the following departments:

I — IN AGRICULTURE AND HORTICULTURE.

The farm contains 226 acres, and is supplied with illustrative specimens of stock of select varieties.

The agricultural experiment station, established in connection with the College, where experiments and scientific investigations relating to agriculture are daily made, affords unusual opportunities to students to become familiar with agriculture, its defects and remedies.

The students of agriculture accompany the professor in the field, garden, conservatory, stock-yard, etc., where lectures are delivered in the presence of the objects discussed, and during the year exercises in practical agriculture of an educational character are given the students who enter upon this course of study.

II — IN MECHANIC ARTS.

The laboratory of mechanic arts is used as an auxiliary in industrial education, and as a school in manual training in the arts that constitute the foundation of various industrial pursuits. The work performed by the students is *instructive* in character, as in any other laboratory, and the classes are taught in sections by a series of graded lessons under the supervision of the professor. In the lower classes of the College each student enters this school, and is assigned three exercises a week, each exercise being two hours long.

The object of this laboratory is not to teach a trade, but to educate, to discipline and train the eye and the hand, as well as the mind, and thus by associating manual and mental training, to educate thoroughly the student for the

duties of life, whatever his vocation may be. There is no attempt to teach students special skill in constructing articles of commercial value, but all the exercises are systematically arranged and designed for purposes of education.

The wood department is located in a commodious hall, 90 x 50 feet, and is provided with a twenty-five horse-power Corliss engine, a planer, circular saw, band-saw, two scroll saws, a buzz planer, twenty-four stands each with a lathe and a full set of tools, and thirty benches for carpentry work with the tools requisite for construction.

A brick building, 30 x 87 feet with two rooms, has been constructed especially for instruction in working iron.

One room is equipped with sixteen forges and tools required for a forge department, and the other with a cupola furnace, having a capacity of 1,000 pounds per hour, a core oven, a brass furnace, moulding benches, a 2000-pound hoist, and special tools for use in a foundry.

The forge and foundry rooms are furnished with a Sturtevant fan and exhauster, supplied with power from a ten horse-power engine, constructed by the students in mechanic arts.

The machine department occupies a brick building, 30 x 50 feet, and is equipped with ten engine lathes, one speed lathe, one 20-inch drill press, one 10-inch sensitive drill, one post drill, one 16-inch shaper, one 5-foot planer, one universal milling machine, a corundum tool grinder, a small emery grinder, a universal cutter and reamer grinder, a No. 1 Brown & Sharpe universal grinding machine, and a power hack saw.

The chipping and filing department is arranged with benches, vises and tools for twelve students.

The tool room is well supplied with special tools for use in instruction, including a machine for grinding twist

drills. The rooms are lighted with electricity whenever necessary.

III —IN PRACTICAL CHEMISTRY.

The chemical laboratory is supplied with modern apparatus, and in its equipment affords excellent facilities for instruction in practical chemistry and for investigation.

The investigations that are undertaken in this laboratory by scientific experts, in connection with the work of the agricultural experiment station, are of especial value to advanced students, and afford them unusual opportunities to learn the methods of scientific research. The building contains a large general laboratory that will accommodate sixty students, a lecture room with capacity for one hundred seats, and nine other rooms, all appropriated to instruction and research in chemistry.

IV.—IN ELECTRICAL ENGINEERING.

The electrical laboratory is well supplied with modern appliances for instruction in electrical engineering. It occupies two large rooms in the basement, and is equipped with many fine instruments of precision: Kelvin deka-ampere balance, Kelvin graded current and potential galvanometers, Cardew voltmeter, Weston voltmeters and ammeter, Queen's magnetic vane voltmeter and ammeter, Thomson watt-meter, Hartman and Braun voltmeter, Kohlrausch ammeter, Wood ammeter, Weston alternating current voltmeter, Weston direct reading watt-meter, Queen's "Acme" testing set, Kelvin electrostatic voltmeter, and many other current-measuring instruments, resistance boxes, Wheatstone bridges, condensers, telephones, batteries, magnets, etc.

The dynamos occupy a separate building and are operated by a twenty-five horse-power Atlas engine, and a thirty-five horse-power Westinghouse engine. In this building are installed the following dynamos:

Edison compound 12 kilo-watt generator, Thomson-Houston 150 light 110 volt dynamo, Weston 150 volt 25 ampere dynamo, Crocker-Wheeler one-horse power motor, Brush six arc-light dynamo with lamps, two-phase alternator and 500 volt 20 ampere generator, made by students. There is also in connection with this department a ten horse-power motor, made by students, at the experiment station, one thousand yards from the College, which is operated by the 500 volt generator in the dynamo room.

V.—IN PHYSICS.

In the College building provision is made for elementary laboratory work in the department of physics. Special rooms in the basement are appropriated for this purpose, and are equipped with the necessary appliances for instruction in practical physics.

VI.—IN MINERALOGY.

This laboratory occupies a convenient room in the basement, and is provided with tables and appliances to accommodate thirty students, with an excellent collection of minerals.

VII.—IN BOTANY.

In the work of the agricultural experiment station there is a botanical garden under the charge of the professor of botany, investigations in botany are given special attention, and opportunities are offered advanced students for practical work in a laboratory especially fitted with microscopes, tables, a dark room for photographic work, and appliances needed for instruction and research. This department is provided with Auzoux's elastic models of seeds and flowers for teaching botany.

VIII.—IN BIOLOGY.

The laboratory in this department adjoins the lecture room of the professor, and is furnished with tables, excel-

lent microscopes and appliances for investigation. Each student of the class works under the supervision of the professor.

IX.—IN ENGINEERING AND SURVEYING.

The necessary apparatus for field work, including transits, levels, plane table, models of bridges, etc., is provided for the use of the students, and the customary exercises in the field are given.

X.—IN DRAWING.

All students in the lower classes are required to take drawing, a study which tends to discipline the mind, as well as to train the eye and hand to accuracy of observation and execution. A large, well-lighted drawing room, that will accommodate fifty students, is provided with tables, lock boxes, etc.

XI —IN MECHANICAL ENGINEERING.

The mechanical course has been extended to include a fairly thorough course of experimental work in mechanical engineering.

The apparatus available for this instruction is as follows: a 25-horse power Harris-Corliss engine, a 35-horse power Westinghouse engine, a 25-horse power Atlas engine, two 9-horse power engines constructed by students in the shops, the boilers belonging to the regular power plant, a small engine and boiler for the special purpose of making efficiency tests, a Dean duplex steam pump, an Ericsson hot air engine, a Westinghouse air pump, four steam engine indicators, a separating calorimeter, thermometers, a pyrometer, scales, a standard steam gauge with apparatus for testing steam gauges, a Crosby dead weight tester with weights for correcting the standard gauge, a 35,000-pound testing machine, and a Henning micrometer extensometer.

No suitable place has as yet been provided for a testing laboratory, and the work is carried on, partly in a room in

the basement of the main building, partly in the dynamo house, and partly in the shops. The work is thoroughly practical, and it is desired to extend it as rapidly as the funds available for the purchase of apparatus will allow.

XII —IN PHYSIOLOGY AND VETERINARY SCIENCE.

There has been constructed for the veterinary laboratory a new and separate two-story building with nine rooms. It is provided with lecture room, office, working and operating rooms for clinical practice, and museum with skeletons of the domestic animals for instruction. Free clinics are given every Saturday for the benefit of the students in veterinary science.

MILITARY TACTICS.

Instruction in this department is given in conformity with the act of Congress. Students receive the benefit of regular military drill, and in addition the military system is used as a means of enforcing discipline and securing good order, promptness and regularity in the performance of academic duties.

This department is under the charge of Lieut. J. H. Wills, 22nd Infantry, U. S. A.

It is supplied with new cadet muskets and accoutrements for the corps, and for artillery practice, with two three-inch rifle guns, carriages and limbers.

COLLEGE BUILDINGS.

The frontispiece is a representation of the main College building. It is 160 by 71 feet, and contains forty-five rooms. This building is not used for dormitories for students, but is appropriated to purposes of instruction and investigation.

It contains the lecture rooms and offices of the professors, laboratories, library, museum, armory, etc.

LANGDON HALL.

This is a two-story building, ninety by fifty feet. The second story is the audience hall, used for commencement and other public occasions.

The first story is appropriated to the laboratory of mechanic arts.

THE CHEMICAL LABORATORY,

As shown on the opposite page, is a two-story structure, 40 by 60 feet, with a rear projection, 35 by 60 feet, of one-story and basement, and contains eight rooms. The exterior is of pressed brick, with cut stone trimmings and terra-cotta ornamentation.

In the basement are ample accommodations for assaying and storage.

The main laboratory will accommodate sixty students, and contains improved working tables, with water, gas and every necessary appliance for chemical work.

The second story contains a lecture room and room for gas analysis. Around this lecture room are cases containing crude and manufactured products, illustrating the subjects of agricultural and industrial chemistry, which are prominent subjects taught in this institution.



CHEMICAL LABORATORY.

GRADUATES IN 1894.

CLASS OF 1894.

HONOR GRADUATES.

COURSE IN CHEMISTRY AND AGRICULTURE.

Champe Seabury Andrews.....Tennessee.

COURSE IN CIVIL ENGINEERING.

James Archibald Duncan.....Pike.

COURSE IN ELECTRICAL AND MECHANICAL ENGINEERING.

Ogden Ellery Edwards.....Calhoun.

GENERAL COURSE.

Peyton Herndon Moore.....Blount.

BACHELOR OF SCIENCE.

George Smith Anderson.....Lee.

Champe Seabury Andrews.....Tennessee.

Kate Conway Broun.....Lee.

James Vandiver Brown.....Georgia.

John Morgan Burns.....Dallas.

Greene Watley Carlisle.....Lee.

William DeLamar Clayton.....Lee.

Roseberry Covington Conner.....Macon.

Palmer Payne Daugette.....Lee.

Rufus Thomas Dorsey.....Georgia.

Waverly Goode Duggar.....Hale.

James Archibald Duncan.....Pike.

Julius Confrey Dunham.....Montgomery.

Charles Dunlap.....Madison.

James Dunlap.....Madison.

Ogden Ellery Edwards.....Calhoun.

Robert Cherry Foy.....Barbour.

Frederic Almet Fulghum.....	Jefferson.
Charles Gordon Greene.....	Lee.
Crosland Clarence Hare.....	Lee.
Augustus J. Harris.....	Morgan.
Arthur William Holstun.....	Chambers.
Jesse Drewry Lane.....	Randolph.
Sydney Leach.....	Tuscaloosa.
Willie Gertrude Little.....	Lee.
Paul Pratt McKeown.....	Florida.
Herman Meislahn.....	Florida.
Lauriston Greene Moore.....	Lee.
Peyton Herndon Moore.....	Blount.
William Washington Moore.....	Blount.
Peter Preer.....	Georgia.
Samuel Arthur Redding.....	Georgia.
John Presley Slaton.....	Macon.
Margaret Kate Teague.....	Arkansas.
Jack Thorington.....	Montgomery.
Graham G olson Vaughan.....	Dallas.
Frank Atkinson Vernon.....	Chambers.
Rinaldo Greene Williams.....	Lee.
Arthur Zachariah Wright.....	Lee.

MASTER OF SCIENCE.

Robert Lee Bivins.....	Lee.
Clarence William Daugette.....	Lee.
James Buhrman Espy.....	Henry.
Thomas Litchfield Kennedy.....	Lee.
Nicholas Barnett Marks.....	Kentucky.
Hampton Knox Miller.....	Talladega.
Altie L Quaintance.....	Florida.
Joel Franklin Webb.....	Coosa.

CIVIL ENGINEER.

Massey Robart Burton.....	Lee.
Henry Hamilton Smith.....	Montgomery.

ELECTRICAL AND MECHANICAL ENGINEER.

John Henry Holt.....	Georgia.
Walter Merritt Riggs.....	South Carolina.

DISTINGUISHED STUDENTS.

Students who receive a grade above 90 in three studies in the Freshman Class, in four in the Sophomore, in five in the Junior, and in six in the Senior, are distinguished for excellence in scholarship, and are awarded

HONOR CERTIFICATES.

The following students received honor certificates in 1894:

SENIOR CLASS.

Champe Seabury Andrews.....	Tennessee.
Kate Conway Broun	Lee.
Roseberry Covington Conner.....	Macon.
James Archibald Duncan.....	Pike.
Ogden Ellery Edwards.....	Calhoun.
Charles Gordon Greene.....	Lee.
Arthur William Holstun.....	Chambers.
Jesse Drewry Lane.....	Randolph.
Willie Gertrude Little.....	Lee.
Paul Pratt McKeown.....	Florida.
Peyton Herndon Moore.....	Blount.
William Washington Moore	Blount.
Rinaldo Greene Williams.....	Lee.

HONOR STUDENTS IN JUNIOR CLASS.

COURSE IN CHEMISTRY AND AGRICULTURE.

Solon Lycurgus Coleman.....	Perry
-----------------------------	-------

COURSE IN ELECTRICAL AND MECHANICAL ENGINEERING.

James Claude Thomason.....	Randolph
----------------------------	----------

GENERAL COURSE.

LeVert Coleman.....	Madison
---------------------	---------

JUNIOR CLASS.

LeVert Coleman.....	Madison.
Solon Lycurgus Coleman.....	Perry.
Langdon Bowie Gammon.....	Georgia.
Henry Hearst Kyser.....	Talladega.
James Newsom.....	Georgia.
Harry Howell Smith.....	Lee.
Herbert Warren Taylor.....	Montgomery.
James Claude Thomason.....	Randolph.
John Adams Wills.....	Lee.

SOPHOMORE CLASS.

Albert Lea Alexander.....	Georgia.
Charles Nutting Alford.....	Marshall.
Andrew Beirne Andrews.....	Tennessee.
William James Beeson.....	Etowah.
James Washington Culver.....	Lee.
George Michael Holley.....	Georgia.
Garry Devon King.....	Georgia.
Francis Morrisette.....	Hale.
James Louis Molder.....	Georgia.
William Abner Tippin.....	Florida.
William Henry Harrison Trammell.....	Lee.
Augustus Robinson Wilkerson.....	Georgia.
William Martin Williams.....	Georgia.
Bryce Hewitt Wilson.....	Franklin.

FRESHMAN CLASS.

Alexander Humphreys Clark.....	Montgomery.
Peyton Graves Clark.....	Montgomery.
Ernest William Heck.....	Illinois.
Edwin Bryce Joseph.....	Montgomery.
Warren Horton McBryde.....	Mobile.
John Purifoy.....	Montgomery.
Frank Hartwell Thomas.....	Georgia.
George Wrigley.....	Georgia.

CATALOGUE OF STUDENTS.

FOR THE SESSION OF 1894-95.

GRADUATE STUDENTS.

[*Residence is Alabama when State is not named.*]

NAME.	RESIDENCE.
Leigh Stafford Boyd.....	Lee.
Kate Conway Broun.....	Lee.
James Vandiver Brown.....	Georgia.
Roseberry Covington Conner.....	Macon.
James Archibald Duncan.....	Pike.
Julius Confree Dunham.....	Montgomery.
Charles Gordon Greene.....	Lee.
Crosland Clarence Hare.....	Lee.
Lauriston Greene Moore.....	Lee.
William Washington Moore.....	Blount.
Walter Merritt Riggs.....	South Carolina.
John Presley Slaton.....	Macon.
Rinaldo Greene Williams.....	Lee.

UNDERGRADUATE STUDENTS.

SENIOR CLASS.

NAME.	COUNTY OR STATE.
Robert Higgins Adams.....	Pike.
Daniel Spigener Anderson.....	Lee.
Walter Scott Askew.....	Chambers.
Hugh Bickerstaff.....	Russell.
George Perkins Bondurant.....	Lee.
Frank Asbury Boykin.....	Lee.
William Wallace Bussey.....	Georgia.
Gordon Flewellen Chambers.....	Russell.
LeVert Coleman.....	Madison.
Solon Lycurgus Coleman.....	Marengo.
Langdon Bowie Gammon.....	Georgia.

Benjamin Browning Haralson.....	Dallas.
Benjamin Glenn Jennings.....	Russell.
Henry Hearst Kyser.....	Talladega.
Charles Linn.....	Jefferson.
James Neil McLean.....	Montgomery.
William Cunningham McMillan.....	Talladega.
James Newsom.....	Georgia.
Henry Hinds Peevey.....	Madison.
Tilden Hendricks Phipps.....	Georgia.
Walter Russell Shafer.....	Montgomery.
Harry Howell Smith.....	Lee.
Percy Hilton Smith.....	Georgia.
Herbert Warren Taylor.....	Montgomery.
James Claude Thomason.....	Randolph.
Robert Edward Lee Weathers.....	Randolph.
Andrew Hearne Whitman.....	Lowndes.
Frank Lewis Whitman.....	Lowndes.
John Adams Wills.....	Lee.

JUNIOR CLASS.

Albert Lea Alexander.....	Georgia.
Charles Nutting Alford.....	Marshall.
Andrew Beirne Andrews.....	Tennessee.
Marion Joseph Bancroft.....	Mobile.
William James Beeson.....	Etowah.
John Simeon Bennett.....	Lee.
Sidney Josiah Bross.....	Coosa.
Joseph Quarterman Burton.....	Lee.
Henry Rozier Casey.....	Jefferson.
LeRoy Abda Christian.....	Shelby.
Albert Bedell Clower.....	Lee.
James Washington Culver.....	Lee.
Walter Ernest Culver.....	Lee.
Hubert Alberto Drennen.....	Jefferson.
Oba DeVan Dumas.....	Wilcox.
Jesse B. Edwards.....	Talladega.
John Cuthbert Farley.....	Lee.
Walter Lynnewood Fleming.....	Pike.
Malcolm Luther Gillis.....	Georgia.

John Louis Glenn.....	Butler.
Annie Florence Heard.....	Lee.
John Fletcher Heard.....	Lee.
Hampton Sanders Henderson.....	Talladega.
Walter Erwin Henley.....	Jefferson.
Charles Wadsworth Hill.....	Greene.
Robert Campbell Holley.....	South Carolina.
Charles Leitner Howard.....	Georgia.
Daniel Thornton Hudmon.....	Lee.
Frank Thomas Jackson.....	Mobile.
Homer Virgil Jackson.....	Georgia.
Richard Sparks Jackson.....	Jefferson.
George Coates Kelley.....	Jefferson.
William Berrian Kelly.....	Montgomery.
Charles Lee King.....	Georgia.
Garry Devon King.....	Georgia.
Francis Morrisette.....	Hale.
James Louis Molder.....	Georgia.
Julian Berry Oglesby.....	Georgia.
John Albin Reeves.....	Montgomery.
Frank Alva Robertson.....	Calhoun.
Oliver John Semmes.....	Mobile.
William Henry Shanks.....	Butler.
Benjamin Asbury Taylor.....	Autauga.
Wade Douglas Taylor.....	Madison.
Walker Reynolds Tichenor.....	Georgia.
William Abner Tippin.....	Florida.
William Henry Harrison Trammell.....	Lee.
Richard Wilde Walker.....	Tennessee.
William Martin Williams.....	Georgia.
Bryce Hewitt Wilson.....	Franklin.
Cary Oscar Wright.....	Lee.
Darwin Stearnes Wright.....	Georgia.
Estelle Love Whitaker.....	Lee.

SOPHOMORE CLASS.

Emile Glines Abbott.....	Georgia.
William Kirk Armstrong.....	Lee.
Harry Boland.....	Jefferson.

George Doan Borup.....	Montgomery.
Lewis Edward Byrum.....	North Carolina.
Walter Marion Carter.....	Lee.
Edgeworth Stephens Casey.....	Jefferson.
Alexander Humphreys Clark.....	Montgomery.
Peyton Graves Clark.....	Montgomery.
Robert Walter Collins.....	Hale.
Thomas Ganaway Conner.....	Macon.
Claude Carson Crawford.....	Morgan.
Alfred Morrison Davidson.....	Dallas.
Mortimer Varner DeBardeleben.....	Macon.
James Allen Durham.....	Jefferson.
Vincent Martin Elmore.....	Montgomery.
Gaston Greil.....	Montgomery.
Jule Alford Haigler.....	Montgomery.
Terry Reese Hardaway.....	Montgomery.
Fletcher Dumas Harvey.....	Lee.
Beverly Pierce Head.....	Jefferson.
Ernest William Heck.....	Illinois.
Harry Herzfeld.....	Tallapoosa.
Joseph Herzfeld.....	Tallapoosa.
William Welch Hill.....	Talladega.
John Buford Hobdy.....	Bullock.
Leslie Kilshaw Irwin.....	Mobile.
Willis Edward Johnson.....	Georgia.
Clarence Neil Jones.....	Montgomery.
Edwin Boyce Joseph.....	Montgomery.
Adus Edwin Killebrew.....	Dale.
George Powe Kyser.....	Talladega.
William Parker Leonard.....	Georgia.
Henry Madison Lindsey.....	Mobile.
William Jay Leinkauf.....	Georgia.
James Fouche Matthews.....	Calhoun.
Warren Horton McBryde.....	Mobile.
William James McLeod.....	Lee.
James Meager.....	Jefferson.
Swepson Cox Morton.....	Macon.
Wade Hampton Negus.....	Mississippi.

Charles Johnson Nelson	Dallas.
William Jacob Nixon	Tennessee.
William Clifford Paden	Etowah.
James Lawrence Pollard	Russell.
James Robert Prince	Mississippi.
John Purifoy	Montgomery.
Adolph Philip Schweizer	Dallas.
Berry Lathum Scott	Texas.
Frank Norris Scott	Dallas.
Samuel Toliver Slaton	Macon.
James Robinson Stewart	Georgia.
Rufus George Shanks	Butler.
Frank Hartwell Thomas	Georgia.
Merrick Dowdell Thomas	Chambers.
Paul Vines	Tallapoosa.
James Clifton Warren	Montgomery.
William Tilman Warren	Montgomery.
Reuben David Webb	Coosa.
William Wrenn	Mobile.
George Wrigley	Georgia.

FRESHMAN CLASS.

John Cock Abernethy	Florida.
William Raiford Affleck	Georgia.
James Roger Atwood	Georgia.
William Brown Beeson	Jackson.
Charles Milford Brewer	Lee.
Ernest Bussey	Georgia.
Samuel Garrett Cardon	Cherokee.
George Walter Chester	Macon.
Joseph Curbow Clay	Montgomery.
George Adair Christian	Calhoun.
Benajah Bibb Cobb	Macon.
Henry Hatchett Cook	Georgia.
William Thomas Covin	Georgia.
Henry Crawford	Mobile.
Walter Marvin Culver	Lee.
William Menefee Dean	Georgia.
George Oliver Dickey	Crenshaw.

Duncan Patterson Dixon.....	Talladega.
Andrew Denny DuBose.....	Lee.
Clifford Lamar Edwards	Lee.
Robert Clark Fenton.....	Connecticut.
Frank Reese Frazer.....	Lee.
Shelton Charles Frederic.....	Mobile.
Arnold Frederic Glass.....	Mobile.
Charles William Glass.....	Mobile.
John Ross Glenn.....	Lee.
John Lemial Gonce.....	Tennessee.
Benjamin Fortson Griffin.....	Texas.
William Emery Guy	Coosa.
Francis Williams Hare.....	Lee.
Charles Edward Harrison.....	Florida.
Henry E. Harvey.....	Lee.
William Thomas Hearn.....	Sumter.
Harry Streety Houghton.....	Jefferson.
Marshall Hill Hurt.....	Macon.
Absalom Jackson.....	Mobile.
David Kahn....	Montgomery.
William Anderson Kline....	Lee.
William Earle Lay.....	Etowah.
Josiah Thomas Mangum.....	Lee.
John Richard McCalla....	Lee.
George Bulger McDonald.....	Coosa.
Peter Mastin McIntyre.....	Montgomery.
John Calvin McLeod.....	Lee.
Edwin Thomas Merrick.....	Louisiana.
James Williamson Mims.....	Calhoun.
Benjamin Otey Minge.....	Marengo.
Chadwick Wiley Minge.....	Marengo.
John Nelson Mixon.....	Conecuh.
George McElhaney Moore.....	Lee.
Berrien Tyrel Morgan.....	Georgia.
Howard Crawford Motley.....	Lee.
John St. Clair Paden.....	Etowah.
Robert Stewart Parker	Sumter.
Harry John Pettus.....	Montgomery.
James Ware Ray.....	Elmore.

John Robbins.....	Dallas.
Benjamin David Stabler..	Wilcox.
William Livingston Stewart.....	Montgomery.
William Bee Stokes.....	Marion.
Cecil Pitts Stowe.....	Lee.
Joseph Wilson Sutcliffe.....	Louisiana.
Alexander Clitherall Taylor.....	Montgomery.
Felix Stanley Thomas.....	Lee.
James Leonard Thomas	Lee.
William Alexander Thomason.....	Lee
Robert Caldwell Whiting.....	Montgomery.
John Wesley Williams.....	Lee.
Richard Morris Williamson.....	Montgomery.

SPECIAL AND IRREGULAR STUDENTS.

John Arrington.....	Montgomery.
Bayard McIntosh Atwood.....	Georgia.
Lovie Irene Fielder.....	Elmore.
Charles Edwin Goulding.....	Florida.
Richard Hackley Goulding.....	Florida.
James Alston Groves.....	Dallas.
Ramesus Alfonso Hammack.....	Dale.
Charles Hays.....	Greene.
Joshua Copeland Hill.....	Pike.
Perry Nance Hill.....	Georgia.
George Reese Irwin.....	Georgia.
Alphonso Rinaldo Jones.....	Coosa.
Ray Nathaniel Knight.....	Calhoun.
Earle Foster Lee.....	Lee.
Robert Mosley Lewis.....	South Carolina.
Edward Sallust McCurdy.....	Lowndes.
Cary Park McElhaney ..	Lee.
William Edwin McEwen....	Georgia.
Andrew Hammill Milstead.....	Elmore.
Fred William Nardin.....	South Carolina.
Samuel Noble.....	Calhoun.
Harry Allen Orr.....	South Carolina.
John Paschal.....	Russell.
William Henry Patterson.....	Georgia.

Marguerite Persons.....	Lee.
Leonard Alvie Thomas.....	Lee.
Westley Park Weathers.....	Marengo.

SUB-FRESHMAN CLASS

Isaac Abraham.....	Montgomery.
Albert Martin Ayres.....	Marshall.
John LeRoy Bryan.....	Washington.
Leo Pogue DuBose.....	Lee.
Walter Alexander Jones.....	Lee.
Crawford Motley Jackson.....	Elmore.
John Warmock Giddens.....	Crenshaw.
Robert Wesley Lockhart.....	Jefferson.
Henry Loeb.....	Montgomery.
James Charner Samuel McGehee.....	Montgomery.
Robert Hugh Reid.....	Barbour.
August Daniel Rheiner.....	Texas.
Ferdie John Rheiner.....	Texas.
Horatio Seymour.....	Sumter.
Joseph Marshall Smith.....	Coosa.
Clifford West Stewart.....	Montgomery.
Andrew Barnett Terrell.....	Elmore.
Burns Michel Wert.....	Morgan.
Albert Edward Woodall.....	Sumter.

SUMMARY.

Graduates.....	13
Senior Class.....	29
Junior Class.....	53
Sophomore Class.....	61
Freshman Class.....	69
Special and Irregular Students.....	27
Total in College Classes.....	252
Sub-Freshman Class.....	19
Total.....	271

NUMBER OF STUDENTS IN EACH SUBJECT OF STUDY.

English	239	Geology ..	31
History	144	Civil Engineering ..	10
French	32	Electrical Engineering ..	39
German	28	Mechanical Engineering ..	35
Latin	103	Biology	9
Mental Science	15	Drawing	205
Political Economy	29	Mechanic Arts	157
Mathematics ..	227	Military Tactics ..	252
Chemistry	100	Mineralogy ..	6
Chemical Laboratory	45	Physical Laboratory	34
Agriculture ..	149	Physiology ..	32
Physics	116	Veterinary Science	32
Botany	76		

MILITARY ORGANIZATION.

—1894-5.—

President,

W. L. BROWN.

Commandant,

JOHN H. WILLS, 1st Lieut. 22nd Infantry.

Surgeon,

J. H. DRAKE, M. D.

Battalion Staff.

Cadet 1st Lieutenant H. H. KYSER Adjutant.

Cadet 1st Lieutenant J. A. WILLS, Quartermaster.

Cadet Sergeant W. M. WILLIAMS, Sergeant Major.

Cadet Sergeant O. J. SEMMES, Quartermaster Sergeant.

Cadet Captains.

1. S. L. COLEMAN,

2. H. H. SMITH,

3. L. B. GAMMON.

Cadet First Lieutenants.

1. W. C. McMILLAN,

2. R. H. ADAMS,

3. JAMES NEWFOM,

4. W. S. ASKEW,

5. J. C. THOMASON,

6. H. BICKERSTAFF.

Cadet First Sergeants.

1. W. A. TIPPIN,

2. H. R. CASEY,

3. A. L. ALEXANDER.

Cadet Sergeants.

1. F. MORRISSETTE,

2. J. W. CULVER,*

3. W. J. BEESON,

4. J. A. REEVES,

5. W. R. TICHENOR,

6. J. L. GLENN.

8. B. A. TAYLOR,

9. J. S. BENNETT,

10. W. E. CULVER

11. G. B. KELLEY,

12. G. D. KING,

13. D. T. HUDMON,

14. J. Q. BURTON,

15. H. A. DRENNEN,

16. W. L. FLEMING.

Corporals.

1. W. H. MCBRYDE,

2. W. T. WARREN,

3. JOHN PURIFOY,

4. A. H. MILSTEAD,

5. W. H. NEGUS,

6. B. M. ATWOOD,

7. B. L. SCOTT,

8. C. J. NELSON,

9. W. C. PADEN,

10. E. B. JOSEPH,

11. G. P. KYSER,

12. L. E. BYRUM.

*COLOR SERGEANT.

REQUIREMENTS FOR ADMISSION.

Applicants for admission must be of good moral character. To enter the freshman class the applicant must be not less than fifteen years of age, and should be qualified to pass a satisfactory examination on the following subjects:

1. Geography, and History of the United States.
2. English—(a) An examination upon sentences containing incorrect English. (b) A composition giving evidence of satisfactory proficiency in spelling, punctuation, grammar and division into paragraphs.

The composition in 1895 will be upon subjects drawn from one or more of the following works: Shakespeare's Julius Cæsar and Merchant of Venice, Longfellow's Evangeline, Irving's Sketch Book, Scott's Marmion, Hughes's Tom Brown at Rugby, Dickens's David Copperfield, Scott's Ivanhoe, Hawthorne's House of the Seven Gables.

3. Mathematics—(a) Arithmetic, including fundamental operations; common and decimal fractions; denominate numbers; the metric system; percentage, including interest and discount; proportion; extraction of square and cube roots. (b) Algebra, to quadratic equations.

Those applicants who desire to continue the study of Latin should be qualified to pass a satisfactory examination in Latin grammar and the first two books of Cæsar, in addition to the above subjects.

For admission to the higher classes, students should be prepared to stand a satisfactory examination on all the studies of the lower classes, as shown in the courses of study. Where opportunity has not been offered to pursue special studies required at this College, the system of equivalents will be adopted, and studies which denote and equivalent amount of discipline and training will be accepted as satisfactory.

ADMISSION OF YOUNG WOMEN.

The privilege of becoming students in this College is granted by the Trustees to young women of mature mind and character, on the following conditions:

The applicant must be eighteen years of age, and if a candidate for a degree, be able to pass a satisfactory examination in each of the four subjects as named below.

If the applicant is a candidate for admission as a special or irregular student, she must be able to pass a satisfactory examination in two of the subjects named.

(a) In English—Proficiency in spelling and punctuation; Grammar (Whitney's Essentials of English); Rhetoric (Lockwood, Abbott's How to Write Clearly, Genung); Scudder's American Prose Selections; Scudder's American Poems.

(b) In History—Macy's Our Government; Chambers's History of the United States; Myers's General History.

(c) In Mathematics—Arithmetic; Algebra, including quadratic equations, logarithms and series; Plane and Solid Geometry; Plane and Analytical Trigonometry, as in Wentworth.

(d) In Latin—Grammar, including the forms and syntax; Jones's Latin Prose Composition; Translation of selections from Cæsar, Nepos, Virgil, Cicero's Orations, Cicero's Letters, or the equivalent.

The equivalents of these subjects, as in above text-books, may be substituted.

Certificates will be granted to those who are not candidates for a degree upon the satisfactory completion of any subject as pursued by the senior class.

When admitted, upon complying with the conditions above stated, they may enter upon the study of any subject taught in the College, and join any class, for which upon examination, they may be found qualified. The only condition imposed will be that they engage in earnest study, and attend the exercises regularly. They will board in the town with private families, and attend College only at the hours of their exercises.

The Trustees authorize the faculty to admit a candidate for a degree who is able to comply with all the requirements, at the age of seventeen, if the application meets with their approval.

There will be no charge for tuition. The incidental fees, amounting to \$12.00 per year, will be paid, \$6.00 on entrance, and \$6.00 on February 1st.

ENTRANCE EXAMINATIONS.

Entrance examinations will be held on Wednesday, the 11th of September, the day on which the session opens. Candidates will also be examined during the session, when application is made for admission.

Applicants who are not prepared to stand the entrance examinations for full admission to the freshman class are admitted to the sub-college department.

They will be advanced to full admission to the freshman class when they are qualified to pass satisfactorily the required examinations.

Students upon their arrival at Auburn will report immediately to the President. No student will be admitted to a recitation in any class previous to matriculation.

NUMBER OF EXERCISES REQUIRED.

All students are required to have not less than fifteen recitations per week, or their equivalent, in addition to the exercises in laboratory work, drawing, and military drill. These additional exercises occupy not less than twelve hours per week and in all give twenty-seven to thirty hours per week required in College exercises.

SPECIAL AND IRREGULAR STUDENTS.

The privilege of electing studies in the lower classes is not granted to young students nor to their parents. The faculty will assign a student on admission to that class of a prescribed course for which he is qualified; but for special reasons, approved by the faculty, he may be permitted to become irregular.

Students qualified to prosecute the studies of the junior class, and those over twenty-one years of age that are not candidates for a degree, are permitted to take, with the advice of the faculty, the subjects of study for which they may be qualified.

Regular students who fail to pass satisfactory final examinations in any one study become special students. They will be classed as regular students pursuing a course for a degree, whenever they can pass the examinations in those subjects in which they were found deficient.

Students, candidates for a degree, who are not in full standing in all the prescribed studies of a class, rank in the military department with that class in which they have the greatest number of studies, and their names are so placed in the catalogue.

COURSES OF INSTRUCTION.

The courses of study include the Physical, Chemical and Natural Sciences, with their applications; Agriculture, Biology, Mechanics, Astronomy, Mathematics, Drawing; Civil, Electrical and Mechanical Engineering; Physiology, and Veterinary Science; English, French, German, and Latin Languages; History, Political Economy, Mental and Moral Sciences.

These studies are arranged in regular courses so as to offer a liberal and practical education as a preparation for the active pursuits of life.

There are four degree courses for undergraduates, each leading to the degree of Bachelor of Science (B. Sc.) and requiring four years for its completion:

- I. COURSE IN CHEMISTRY AND AGRICULTURE.
- II. COURSE IN MECHANICS AND CIVIL ENGINEERING.
- III. COURSE IN ELECTRICAL AND MECHANICAL ENGINEERING.
- IV. GENERAL COURSE.

There are also two partial courses, each requiring two years for its completion:

- V. TWO-YEAR COURSE IN AGRICULTURE.
- VI. TWO-YEAR COURSE IN MECHANIC ARTS.

Course I includes theoretical and practical instruction in those branches that relate to chemistry and agriculture, and is especially adapted to those who propose to devote themselves to agriculture or chemical pursuits.

Course II includes the principles and applications of the sciences that directly relate to civil engineering, and is adapted to those who expect to enter that profession.

Course III includes, besides the general principles and applications of the sciences, a special course in the applications of electricity and mechanics, and is arranged for the profession of electrical and mechanical engineering.

Course IV has been arranged to give a general and less technical education in subjects of science and language to meet the wants of those students who have selected no definite vocation in life, as well as of those who propose ultimately to engage in teaching, or in some commercial or manufacturing business.

Courses V and VI have been arranged for the benefit of those students who, for reasons satisfactory to themselves, are unable to continue at college four years and to take one of the regular degree courses.

Students who complete either of these two-year courses will, on passing a satisfactory examination, receive certificates indicating their attainments.

Those who have completed the general course in each

department of the school of mechanic arts, and are qualified, can enter upon a more extended technical course in mechanical engineering.

PREPARATORY COURSE IN PHARMACY AND MEDICINE.

Students who look to pharmacy or medicine as a profession, and are qualified, can enter upon a special course in chemistry, botany, physiology and biology, and occupy their time with great profit in the laboratories of these departments under the immediate direction of the professors.

With the very excellent facilities offered in these laboratories scientific training and preparation of great value can be obtained.

COURSE IN MINING ENGINEERING.

Students who have received the degree of B. Sc. in engineering, or who have prosecuted an equivalent course of study, can enter upon a special course of mining engineering, which includes the following subjects of study, and will require a residence of one year:

Industrial Chemistry, Assaying, Reduction of Ores, Mineralogy, Economic Geology, Mining Machinery, Drifting, Tunnelling, Timbering, Ore Dressing, and the various operations connected with the exploitation of mines.

This course of study will be under the charge of the professors of chemistry, engineering, and geology.

SPECIAL ONE-YEAR COURSE IN AGRICULTURE.

Young men over twenty-one years of age who desire to study agriculture will be permitted, without examination, to enter any class under the professor of agriculture, and will be excused from reciting in any other class, from military duty, and from all other college duties; but will be under the general college regulations, and will be required to have their time fully occupied.

They can attend the lectures in agriculture in all the classes and engage in the practical work at the experiment station, in the field, stock-yard, dairy, garden, orchard, vineyard, etc., and may thus, in one year, acquire valuable practical knowledge of scientific agriculture.

LABORATORY INSTRUCTION.

Laboratory instruction constitutes an important feature in the courses of education provided for the students of this College, and as far as possible all students are required to enter upon laboratory work in some one department.

Laboratory instruction and practical work are given in the following departments:

- I. CHEMISTRY.
- II. ENGINEERING, FIELD WORK, SURVEYING, ETC.
- III. AGRICULTURE.
- IV. BOTANY.
- V. MINERALOGY.
- VI. BIOLOGY.
- VII. TECHNICAL DRAWING.
- VIII. MECHANIC ARTS.
- IX. PHYSICS.
- X. ELECTRICAL ENGINEERING.
- XI. MECHANICAL ENGINEERING.
- XII. PHYSIOLOGY AND VETERINARY SCIENCE.

NOTE—Special work in English or History may be taken by students in the General Course as a substitute for laboratory work.

I.—COURSE IN CHEMISTRY AND AGRICULTURE.

The Numerals opposite the subjects indicate the number of hours per week.

FRESHMAN CLASS.

First Term.

5. English.
2. History.
5. Mathematics.
3. Elementary Physics.
3. Drawing.
6. Mechanic Art Labor'y.
3. Military Drill.

Second Term.

5. English.
2. History.
5. Mathematics.
3. Elementary Physics.
3. Drawing.
6. Mechanic Art Labor'y.
3. Military Drill.

Third Term.

5. English.
3. History.
5. Mathematics.
2. Agriculture.
3. Drawing.
6. Mechanic Art Labor'y.
3. Military Drill.

SOPHOMORE CLASS.

First Term.

3. English.
3. History.
5. Mathematics.
3. General Chemistry.
2. Agriculture.
3. Drawing.
6. Mechanic Art Labor'y.
2. Practical Agriculture.
3. Military Drill.

Second Term.

3. English.
3. History.
5. Mathematics.
3. General Chemistry.
2. Agriculture.
3. Drawing.
6. Mechanic Art Labor'y.
2. Physiology.
3. Military Drill.

Third Term.

3. English.
3. Botany (a).
5. Mathematics.
3. General Chemistry.
2. Agriculture (b).
3. Drawing.
6. Mechanic Art Labor'y.
2. Physiology.
3. Military Drill.

JUNIOR CLASS.

First Term.

3. English.
3. Physics.
3. Industrial Chemistry.
2. Agriculture.
4. Botany (Lab'y).
1. Military Tactics.
9. Chemical Laboratory.
2. Veterinary Science.
3. Military Drill.

Second Term.

3. English.
3. Physics.
3. Industrial Chemistry.
2. Agriculture.
4. Botany (Lab'y).
1. Military Tactics.
9. Chemical Laboratory.
2. Veterinary Science.
3. Military Drill.

Third Term.

3. English.
3. Physics.
3. Industrial Chemistry.
2. Agriculture.
4. Botany (Lab'y).
1. Military Tactics.
9. Chemical Laboratory.
2. Veterinary Science.
2. Military Drill.

SENIOR CLASS.

FIRST TERM.

2. English Literature.
2. Mental Science.
2. Physics.
2. Geology.
5. Biology.
2. Agricultur'l Ch'm'try.
1. Military Science.
9. Chemical Laboratory.
2. Practical Agriculture.

SECOND TERM.

2. Political Economy.
2. Mental Science.
2. Astronomy.
2. Geology.
5. Biology.
2. Agricultur'l Ch'm'try.
1. Military Science.
9. Chemical Laboratory.
2. Veterinary Science.

THIRD TERM.

2. Political Economy.
2. Mental Science.
2. Astronomy.
2. Geology.
5. Biology.
2. Agricultur'l Ch'm'try.
1. Military Science.
9. Chemical Laboratory.
2. Veterinary Science.

(a) Begin's March 1st.

(b) Also Practical Agriculture.

II.—COURSE IN MECHANICS AND CIVIL ENGINEERING.

The numerals opposite the subjects indicate the number of hours per week.

FRESHMAN CLASS.

FIRST TERM.	SECOND TERM.	THIRD TERM.
5. English.	5. English.	5. English.
2. History.	2. History.	3. History.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Elementary Physics.	3. Elementary Physics.	2. Agriculture.
3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SOPHOMORE CLASS.

FIRST TERM.	SECOND TERM.	THIRD TERM.
3. English.	3. English.	3. English.
3. History.	3. History.	3. Botany (a).
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. General Chemistry.	3. General Chemistry.	3. General Chemistry.
2. Agriculture (b).	2. Agriculture (b).	2. Agriculture (b).
	2. Physiology.	2. Physiology.
3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

JUNIOR CLASS.

FIRST TERM.	SECOND TERM.	THIRD TERM.
3. English, French, or German.	3. English, French, or German.	3. English, French, or German.
3. Physics.	3. Physics.	3. Physics.
5. Mathematics.	5. Mathematics.	5. Mathematics.
5. Civil Engineering.	5. Civil Engineering.	5. Civil Engineering.
5. Drawing.	5. Drawing.	5. Drawing.
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
6. Lab'y, Mech. Arts (c).	6. Lab'y, Mech. Arts (c).	6. Lab'y, Mech. Arts (c).
2. Field Work, Engin'g.	2. Field Work, Engin'g.	2. Field Work, Eng.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SENIOR CLASS.

FIRST TERM.	SECOND TERM.	THIRD TERM.
2. English Literature (d)	2. Political Economy (d).	2. Political Economy (d)
2. Physics.	2. Astronomy.	2. Astronomy.
2. Geology.	2. Geology.	2. Geology.
3. Mathematics.	3. Mathematics.	3. Mathematics.

(a) Begins March 1st.

(b) For Agriculture may be substituted Physical Laboratory.

(c) Or Mineralogy.

(d) For Eng. Lit. and Pol. Econ. may be substituted French or German.

5. Civil Engineering.	5. Civil Engineering.	5. Civil Engineering.
5. Drawing.	5. Drawing.	5. Drawing.
1. Military Science.	1. Military Science.	1. Military Science.
4. Mech. Eng., Lab'y.	4. Mech. Eng., Lab'y.	4. Mech. Eng., Lab'y.
Field Work, Engin'g.	Field Work, Engin'g.	Field Work, Engin'g.

III.—COURSE IN ELECTRICAL AND MECHANICAL ENGINEERING.

The numerals opposite the subjects indicate the number of hours per week.

In Freshman and Sophomore classes same as in course in mechanics and civil engineering.

JUNIOR CLASS.

FIRST TERM.	SECOND TERM.	THIRD TERM.
3. English, French, or German.	3. English, French, or German.	3. English, French, or German.
3. Physics.	3. Physics.	3. Physics.
5. Mathematics.	5. Mathematics.	5. Mathematics.
4. Electrical Engin'g.	4. Electrical Engin'g.	4. Electrical Engin'g.
3. Mech. Engineering.	3. Mech. Engineering.	3. Mech. Engineering.
4. Mechanical Drawing.	4. Mechanical Drawing.	4. Mechanical Drawing.
4. Electrical Laboratory.	4. Electrical Laboratory.	4. Electrical Laboratory.
6. Mech. Art Lab'y.	6. Mech. Art Lab'y.	6. Mech. Art Lab'y.
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SENIOR CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
2. English Literature (b).	2. Political Economy (b)	2. Political Economy (b).
2. Physics.	2. Astronomy.	2. Astronomy.
2. Geology.	2. Geology.	2. Geology.
3. Mathematics.	3. Mathematics.	3. Mathematics.
5. Electrical Engineer'g.	5. Electrical Engineer'g.	5. Electrical Engineer'g.
5. Mech. Engineering.	5. Mech. Engineering.	5. Mech. Engineering.
2. Electrical Designing.	2. Electrical Designing.	2. Electrical Designing.
6. Electrical Laboratory.	6. Electrical Laboratory.	6. Electrical Laboratory.
4. Mech. Eng. Lab'y.	4. Mech. Eng. Lab'y.	4. Mech. Eng. Lab'y.
1. Military Science.	1. Military Science.	1. Military Science.

(b) French or German may be substituted.

IV.—GENERAL COURSE.

The numerals opposite the subjects indicate the number of hours per week.

FRESHMAN CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
3. English.	3. English.	3. English.
2. History.	2. History.	3. His'ory.
5. Latin.	5. Latin.	3. Latin.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	2. Agriculture.
3. Military Drill.	3. Military Drill.	6. Mechanic Arts.
		3. Military Drill.

SOPHOMORE CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
5. Latin.	5. Latin.	5. Latin.
3. History.	3. His'ory.	3. Botany (a).
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. General Chemistry.	3. General Chemistry.	3. General Chemistry.
3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

JUNIOR CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
3. English.	3. English.	3. English.
3. Phys'cs.	3. Physics.	3. Physics.
3. Mathematics.	3. Mathematics.	3. Mathematics.
3. French.	3. French.	3. French.
3. German.	3. German.	3. German.
3. Latin.	3. Latin.	3. Latin.
1. Military Tactics.	1. Military Tactics.	1. Military Tactics.
6. Laboratory Work (b).	6. Laboratory Work (b).	6. Laboratory Work (b).
3. Military Drill.	3. Military Drill.	3. Military Drill.

SENIOR CLASS.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
2. Eng'ish Literature.	2. Political Economy.	2. Political Economy.
2. Mental Science.	2. Mental Science.	2. Mental Science.
2. Physics.	2. As'tronomy.	2. Astronomy.
2. Geology.	2. Geology.	2. Geology.
3. French.	3. French.	3. French.
3. German.	3. German.	3. German.
2. Latin.	2. Latin.	2. Latin.
1. Military Science.	1. Military Science.	1. Military Science.
6. Laboratory Work (b)	6. Laboratory Work (b).	6. Laboratory Work (b)

(a) Begins March 1st.

(b) The student may elect the laboratory of any department for which he may be qualified.

V.—TWO-YEAR COURSE IN MECHANIC ARTS.

FIRST YEAR.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
5. English.	5. English.	5. English.
2. History.	2. History.	3. History.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Elementary Physics.	3. Elementary Physics.	2. Agriculture.
3. Drawing.	3. Drawing.	3. Drawing.
6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.	6. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SECOND YEAR.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
3. English.	3. English.	3. English.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Physics.	3. Physics.	3. Physics.
3. Drawing.	3. Drawing.	3. Drawing.
12. Mechanic Art Lab'y.	12. Mechanic Art Lab'y.	12. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.

VI.—TWO-YEAR COURSE IN AGRICULTURE.

FIRST YEAR.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
5. English.	5. English.	5. English.
2. History.	2. History.	3. History.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. Elementary Physics.	3. Elementary Physics.	2. Agriculture.
3. Drawing.	3. Drawing.	3. Drawing.
4. Mechanic Art Lab'y.	4. Mechanic Art Lab'y.	4. Mechanic Art Lab'y.
3. Military Drill.	3. Military Drill.	3. Military Drill.
2. Practical Agriculture.	2. Practical Agriculture.	2. Practical Agriculture.

SECOND YEAR.

<i>First Term.</i>	<i>Second Term.</i>	<i>Third Term.</i>
3. English.	3. English.	3. English.
5. Mathematics.	5. Mathematics.	5. Mathematics.
3. General Chemistry.	3. General Chemistry.	3. General Chemistry.
4. Agriculture.	4. Agriculture.	4. Agriculture.
	2. Physiology.	2. Physiology.
2. Veterinary Science.	2. Veterinary Science.	2. Veterinary Science.
12. Practical Agriculture.	12. Practical Agriculture.	12. Practical Agriculture.
3. Military Drill.	3. Military Drill.	3. Military Drill.

SCHEDULE OF EXERCISES.

HOURS	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
I. 8-9	4. Algebra. 3 Latin. 1 and 2 Drawing. 1 Elec. Engineer'g. 2. Mech. Engineer'g.	3. Physiology. 4. Geometry. 3 Latin. 2 German. 1 and 2 Drawing. 2 Botany. 1. Mental Science. 1. Elec. Engineer'g.	4. Algebra. 3 Latin. 1 and 2 Drawing. 1. Vet. Science. 1. Elec. Engineer'g.	3 Physiology. 4. Geometry. 3 Latin. 2 German. 1 and 2 Drawing. 2 Botany. 1. Mental Science. 1. Elec. Engineer'g	4 Algebra. 3 Latin. 1 and 2 Drawing. 1. Veterinary Sci. 1. Elec. Engineer'g	Exerc's in Elocution.
II. 9-10	4. English. 3 Chemistry. 2. Engineering. 2 Latin. 1 Calculus. 2. Elec. Engineer'g.	4. History. 3. Agriculture. 2. Engineering. 2 Botany. 1. Physics. 2. Elec. Engineer'g.	4 English. 3 Chemistry. 2. Engineering. 2 Latin 1 Calculus 2. Vet. Science. 2. Elec. Engineer'g	4. History. 3. Agriculture. 2 Engineering. 2 Botany. 1. Physics. 2. Elec. Engineer'g	4. English. 3. Chemistry. 2. Engineering. 2 Latin. 1. Biology. 1. Calculus. 2. Mech Engineer'g 2 Vet. Science.	Military Drill.
III. 10-11	3 English. 2. Physics. 1. German. 1. Engineering. 1. Biology. 1. Mech. Engineer'g	3. History (1. 2). 3. Botany (2. 3) 1. Biology. 1. Engineering. 4. English. 1. Mech. Engineer'g 2. French.	3. English (1. 2). 2. Physics. 1 German. 1. Engineering. 1. Biology. 1. Mech. Engineer'g	3. History (1. 2) 3. Botany (2. 3) 1. Engineering. 4. English. 1. Mech. Engineer'g 2. French.	3. Eng'ish. 2. Physics. 1. German. 1. Engineering. 1. Biology. 4. History (3). 1. Mech. Engineer'g	Mechanic Arts. Chemical Laboratory. Electrical Laboratory. Physical Laboratory. Veterinary Clinics. Biological Laboratory. Field Engineering

SCHEDULE OF EXERCISES.—CONTINUED.

HOURS	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
IV.	4. Physics (1. 2). 4. Latin (1. 2). 3. Drawing. 2. Agriculture. 2. Mathematics. 1. Chemistry. 1. French.	4. Latin. 3. Drawing. 2. Agriculture. 2. Mathematics. 1. Chemistry. 1. French.	4. Physics (1. 2). 4. Latin (3). 3. History (1. 2). 3. Botany (2. 3). 2. Mathematics. 2. Chemistry. 1. English (1). 1. Political Economy (2. 3). 4. Mechanic Arts.	4. Latin. 2. Agriculture. 2. Mathematics. 1. Chemistry. 3. Physiology (3). 1. French.	4. Physics (1. 2). 4. Agriculture (3). 4. Latin (1. 2). 3. Drawing. 2. Mathematics. 2. Chemistry. 1. Military Science. 4. Mechanic Arts.	1. French. 3. Mechanic Arts. Chemical Laboratory. Electrical Laboratory. Physical Laboratory. Veterinary Clinics Biological Laboratory. Field Engineering.
V.	4. Drawing. 3. Mathematics. 2. English. 1. Geology. 4. Mechanic Arts. 1. Elec. Designing.	3. Mathematics. 2. English. 1. Geology.	4. Drawing. 3. Mathematics. 1. Latin. 4. Mechanic Arts. 2. Mech. Engineering 2. German. 1. Elec. Designing.	3. Mathematics. 2. English. 1. Geology.	4. Drawing. 3. Mathematics. 1. Latin 4. Mechanic Arts. 1. Elec. Designing 2. Military Tactics.	2. French. 3. Mechanic Arts Chemical Laboratory. Electrical Laboratory. Physical Laboratory. Veterinary Clinics. Biological Laboratory. Field Engineering.
12-1						
P. M.	4. Mechanic Arts. 3. Field W'rk, Agr. 1 & 2 Laboratory. 1 & 2 Field Work. Engineer'g. 1 & 2 Mach. Work. Elec. Lab. Work. Physical Laboratory	3. Mechanic Arts. 2 Mineralogy Laboratory Military Drill (*). 3 Mech. Labor'tory Elec Lab'y Work. 1 and 2 History.	4. Mechanic Arts. 3. Field W'rk, Agr. 1 & 2 Laboratory, 1 & 2 Field Work. Engineer'g. 1 & 2 Mach. Work. Ex'cis in Elocution Elec. Lab Work. Physical Labor'tory	3. Mechanic Arts. 2 Mineralogy Laboratory. Military Drill (*) 3 Mech. Labor'tory Elec. Lab'y Work. 1. and 2 History.	4. Mechanic Arts. 3. Field W'rk, Agr. 1 & 2 Lab., Chem. 1 & 2 Field Work. Engineer'g 1 & 2 Mach. Work. Ex'cis in Elocution Elec Lab. Work. Physical Labor'tory	
VI. VII.						
2-4						

Chapel services daily at 7:45 a. m.
 Numbers prefixed denote classes—1 denotes senior, 2 junior, etc. Numbers affixed—(1), (2), (3), denote terms.
 *From 4:30 to 5:30 p. m.

DEPARTMENTS OF INSTRUCTION.

PHYSICS AND ASTRONOMY.

PRESIDENT BROWN.

The instruction is given by recitations from text-books and lectures, illustrated by experiments. The first part of the course is occupied with elementary rational mechanics, treated graphically.

This is followed by a full discussion of molecular mechanics; while due prominence is given to principles, frequent reference is made to the applications of science.

The studies of the junior class include the properties of matter, units of measure, force, work, energy, kinematics, kinetics, mechanic powers, friction, pendulum, molecular forces of solids, liquids and gases, theory of undulations, heat, electricity, magnetism, etc.

The studies of the senior class include optics and astronomy.

Post-Graduate Course. This includes the study of analytical mechanics, and requires a knowledge of differential and integral calculus.

PHYSICAL LABORATORY.

Instructor W. M. Riggs has charge of the classes in elementary physics, and of the physical laboratory. In elementary physics the students are taught mechanics, solving problems by the elements of graphical statics, and are required to do such work in the physical laboratory as is adapted to their attainments. A part of their time is given to learning practical telegraphy by the use of instruments provided for that purpose.

The physical laboratory is equipped with a number of instruments of foreign and American manufacture. It contains a

standard metre bar, a horizontal comparator, a Kater reversion pendulum, a cathetometer with micrometer, a spectrometer furnished with prisms, crystal holder and flat diffraction grating, made by the Societe Genevoise, a spectroscope by Browning, with a large amount of spectrum apparatus, Carre's ice machine, Becker's balances, a small dividing engine and a vertical comparator, both the latter made at the College in the laboratory of mechanic arts. There is also a large amount of minor apparatus, thermometers, barometers, calorimeters, and apparatus for experimentally determining the parallelogram of forces, for determining rolling and sliding friction, torsion and flexure, specific gravity, etc.

The student in this laboratory is required to ascertain experimentally various physical laws, hence in all exercises there is something to measure. From these measures he is required to find the law connecting the quantities involved. Results of experiments are required to be entered, in tabular form, together with diagrams, etc., in a laboratory note-book.

MATHEMATICS.

PROF. SMITH.

The general course for the first two years embraces the first year, algebra and geometry, six books; second year, solid geometry, plane and spherical trigonometry, surveying, mensuration.

Two objects are sought to be attained: first, mental discipline; second, a thorough knowledge of the principles of pure mathematics and their practical applications.

Theoretical and practical instruction is given to the sophomore class in farm, town, and government land surveying, dividing land, mapping, plotting, and computing areas, etc.; also in the theory, adjustment and use of instruments.

The class, in sections of six or eight, devote three afternoons a week during the second and third terms to field practice.

Mensuration includes an extended course in measurements of heights and distances, plane, rectilinear and curvilinear figures, surfaces and volumes.

The completion of this course, common to all students, lays the foundation for the pure and applied mathematics of the mechanical and engineering courses. Analytical geometry, descriptive geometry, and calculus are pursued in the mechanical and engineering courses. Especial attention is given to their practical applications.

During the entire course. instruction in text-books is supplemented by lectures. Solutions of original practical problems are required of the student, to make him familiar with the application of principles and formulæ.

TEXT-BOOKS.

Wentworth's Algebra, Wentworth's Geometry, Wentworth's Trigonometry and Surveying, Wentworth's Analytical Geometry, Faunce's Descriptive Geometry, Taylor's Calculus, Johnson's Differential Equations, Osborne's Problems, Peck's Determinants.

BOTANY AND GEOLOGY.

PROF. MELL.

Geology.—This subject is studied in the senior class, and extends through the entire session. Special attention is given to the geology of Alabama, and many illustrations are drawn from the coal and iron fields and other natural deposits of minerals in the State. The origin of ore deposits, mineral springs and geological relations of soils are carefully studied.

There is also a course of advanced work in practical geology for post-graduate students. This subject is pursued by applicants for degrees of master of science and mining engineer.

The junior class in engineering spends two terms in mineralogy and blow-pipe work.

Botany.—The students of the sophomore class begin the study of botany the first of March and continue it through the session. Analytical work is made an important feature. This class is provided with plants from the fields, and taught how to determine their specific names. The work is sufficiently exhaustive to enable the student, after completing the course, to name any of the ordinary weeds and grasses that he will encounter in this section.

In the junior class, in the course of chemistry and agriculture, an amount of time is devoted to systematic and structural botany, and to advanced laboratory work with the microscope in the preparation of specimens showing plant structure; this work is sufficient to familiarize the students with the methods of plant building and cellular organization. Excellent microscopes of the most improved patterns, and all the necessary chemicals and apparatus for preparing and mounting vegetable tissues, are used by the students.

FACILITIES FOR WORK.

Geology.—The department is equipped with models of Mount Shasta, the earthquake of 1887 in Japan, glass crystals for teaching crystallography; charts and maps of the geology of America and Europe; Colt's lantern complete with oil, oxy-hydrogen and automatic electric lamps; a large assortment of fine lantern slides representing geological formations in this country and abroad; a well equipped mineralogical laboratory for thirty students, and supplied with collection of representative minerals.

Botany.—The facilities for teaching this subject are as follows: Auzoux's clastic models of seeds and flowers; a large collection of pressed plants of Alabama and other sections, mounted and catalogued. There is also a laboratory for practical work in Botany equipped with slate topped tables for twenty students; dissecting and compound microscopes by Zeiss, Leitz and

Bausch & Lomb ; projection microscopic apparatus ; microtomes by King and Bausch & Lomb ; all the necessary glass ware and smaller dissecting instruments required in a well equipped laboratory. The Zeiss compound microscope used by the professor for experiment work in connection with the Station is supplied with Abbe's illuminating apparatus, slide changers, Abbe's camera lucida, polarizers, apochromatic objectives (16 mm, 8 mm, 4 mm, and homogeneous immersion), oculars (2, 3, 6, 8, 12, 18 and photographic), eye-piece with micrometer. This laboratory is well lighted with gas and electricity and with a good exposure for ample sunlight.

In connection with the department there is a photographic dark room and an excellent photographic outfit consisting of cameras varying in size from 4 x 5 to 6½ x 8½ inches ; Bausch & Lomb's Professional photo-micro camera extending to eight feet ; Zeiss' anastigmat photographic lens 6½ x 8½ fitted with Bausch & Lomb's diaphragm shutter, and Zeiss' wide angle lens 6½ x 8½, all mounted in aluminium ; Clark's lens fitted with diaphragm shutter ; Darlot lens 4 x 5 ; the accessory apparatus and chemicals required for first-class work in photography.

The students have access to the Botanical Garden where experiments in grass culture and many other plants of interest to the farmer are conducted by the professor.

TEXT BOOKS.

LeConte's Geology, William's Practical Geology, Tarr's Economic Geology, Dana's Mineralogy, Gray's Botany, Nelson's Herbarium and Plant Descriptions, Laboratory Guide.

CIVIL ENGINEERING AND DRAWING.

PROF. LANE.

CIVIL ENGINEERING.

The special studies of this department begin in the junior class, and require good knowledge of algebra, geometry, trigonometry and analytical mechanics. They are as follows;

Junior class.—Simple, compound, reversed and parabolic curves, turnouts and crossings, leveling, gradients, setting slope stakes, etc.

Special attention will be paid in this class to the location, reconstruction, drainage and maintenance of country roads; and the various pavements and foundations for the same.

Senior class.—Classification, appearances, defects, seasoning, durability and preservation of timber, classification and description of natural building stones; bricks and concretes; cast and wrought iron, steel and other metals; limes, cements, mortars and their manufacture; paints and other preservatives; classification of strains and a general mathematical discussion of same; joints and fastenings; solid and open built beams; classification, construction and mechanics of masonry; foundations on land and in water; bridges and roofs of different kinds; their construction and strains determined mathematically and graphically; common roads, their coverings, location and construction; location and construction of railroads; navigable, irrigation, and drainage canals; river and sea-coast improvements.

Theory and practice are combined in both classes.

TEXT BOOKS.

Junior class.—Henck's Field Book for Railway Engineers and Byrne's Highway Construction.

Senior class.—Wheeler's Civil Engineering and Von Ot's Graphic Statics.

DRAWING.

All of the students of the freshman and sophomore classes are required to take drawing; but only the students in mechanics and civil engineering in the junior and senior classes.

The freshman class is taught linear and free-hand drawing. The sophomore class is instructed in the principles

of orthographic and isometric projections, shade and shadows, perspective and tinting. In the junior class the instruction embraces a more extended course in orthographic and isometric drawing, perspective, shades and shadows, and tinting; also sketches of tools and machines, plans, elevations and cross-sections of buildings, and blue prints. The senior class make topographical drawings, and drawings of machines, roofs, bridges, etc., to different scales, and blue prints. Plans, profiles and sections of railroad surveys complete the instruction in this department.

TEXT BOOKS.

Freshman class.—Kitchener's Geometrical Note Book, Thorne's Junior Course in Mechanical Drawing, and Davidson's Model Drawing.

Sophomore class.—Davidson's Projections, Davidson's Practical Perspective, Keuffel & Esser's Alphabet.

Junior class.—Davidson's Building Construction, Davidson's Drawing for Mechanics and Engineers, Plates belonging to the College, Keuffel & Esser's Alphabet.

Senior class.—French, English and American Plates belonging to the College, Keuffel & Esser's Alphabet.

ENGLISH AND POLITICAL ECONOMY.

PROF. THACH

OBJECTS AND METHODS.

In this department the students pursue a systematic course in the English language and literature.

Language is the avenue of approach to all knowledge; the interpretation of words is the fundamental process in education of whatsoever kind. A full course of English is, therefore, considered especially important in the technical courses of study that do not include the ancient classics. Accordingly, the course of English is continued throughout the four years of the College curriculum, three

hours a week, and is made obligatory upon all students, with the exception of those pursuing the first two years of the course in Latin. In this extended drill in the grammar and literature of the English language, the endeavor is made to afford a training somewhat equivalent to the ordinary course in the classical languages.

In view of the ill preparation in languages, especially in their mother tongue, exhibited by many of the candidates for admission to the freshman class, it is deemed advisable, for the sake of honest work, to devote a portion of the first year to grounding such students in the principles of grammar. Further, with the idea that an ability to speak and write correctly English of the present, and to appreciate the literary excellencies of standard authors, is more desirable than training in the philological curiosities and literary crudities of Anglo-Saxon literature, the course of study in this institution is confined exclusively to the literature of modern English.

Especial attention is given to the study of the writings, themselves, of leading English authors, since direct contact with literature is considered more profitable than information merely *about* literature.

COURSE OF STUDY.

Freshman class.—Five hours a week; study of grammar, the principles of special and general composition, with frequent brief papers illustrating the laws studied; study of American authors; Irving, Hawthorne, Holmes, Poe, Bryant, Longfellow.

Whitney's *Essentials*, Lockwood's *Rhetoric*, Scudder's *Master pieces of American Literature*.

Sophomore class.—Three hours a week; study of style, analysis of selections of prose and poetry, frequent essays on historic and literary themes.

Genung's *Rhetoric*, Genung's *Rhetorical Analysis*, Hales's *Longer English Poems*.

Junior class.—Three hours a week; lectures on the history of English literature, critical study of English classics, essays.

Stopford Brooke's History of English Literature, Palgrave's Golden Treasury, Minto's English Prose, Garnett's English Prose from Elizabeth to Victoria.

* Senior class.—Two hours a week, first term. Principles of Criticism, Shakespeare's Julius Cæsar, Hamlet, Dowden's Shakspeare, etc.

ESSAYS AND ORATIONS.

Theory without practice is as fruitless in the study of English as in any other department of study. Practical work is indispensable to the successful teaching of English.

Besides numerous brief papers, illustrative of the subject matter of the text-books, set essays or orations are required of all students; for the freshman class, ten essays a year; ten for the sophomore; for the senior and junior classes, three orations each.

DECLAMATION.

The old practice of committing pieces to memory for "speaking" is cultivated as a means, both of training in the art of thinking on the feet, and of storing the mind with the diction of finished specimens of English style.

The sophomore class is heard weekly throughout the year in sections of ten, once for an hour and a half in rehearsal, afterwards in the study hall before the body of students.

The senior and junior classes also deliver their orations in public.

PHILOSOPHY AND POLITICAL ECONOMY.

The entire senior class pursues the study of intellectual science, twice a week, through the year; and political economy twice a week, during the last two terms. The instruction in this department is by lectures in combination with text-books.

Intellectual Science.—Psychology defined. Value in relation to moral culture, education, and Natural Sciences. The relations of the Soul to matter. The arguments of the Materialist. Counter arguments. The Faculties of the Soul. The nature of Conscious-

ness. Sense Perception. *Memory*, its nature, development, education. Fancy. Imagination. Nature of conceptions. Language. Judgment. Reasoning. Deduction. Induction, etc. *Porter's Intellectual Science*.

Political Economy.—Value; production of wealth; land; labor; capital; division of labor; distribution of wealth; wages; trades-union; co-operation; *money*; credit; functions of government; taxation; tariff; education, etc. *F. A. Walker's Advanced Political Economy. Lectures by Professor*.

A Post-graduate Course has been established in Political Economy. Topics are assigned for research by the student, who is facilitated in his labor by a well chosen library, including most of the standard works on political economy and government.

A Post graduate Course has also been established in English. The course is as follows: Shakespeare's Hamlet, Othello, Macbeth, Merchant of Venice, As You Like It, Henry IV., Part I, Richard III., King John.

REFERENCE BOOKS.

Ward's Shakespeare; Furness's Variorum; Hudson's Shakespeare; Clark and Wright's Select Plays of Shakespeare; Rolfe's Shakespeare; Halliwell-Phillips's Life of Shakespeare; Richard Grant White's Life of Shakespeare; Collier's Annals of the Stage; J. A. Symond's Shakespeare's Predecessors; Hudson's Art, Life, etc., of Shakespeare; Giles's Human Life in Shakespeare; Mrs. Jameson's Woman in Shakespeare; Dowden's Shakespeare's Art.

Post-Graduate Course in Dryden.—*Poetical Works* (Christie); *Essay on Dramatic Poesy* (Thomas Arnold); *Essay on Satire*, etc., (Yonge); Saintsbury's *Life of Dryden*.

Pope.—*Poetical Works* (Ward); *Satires* (Pattison); Stephen's *Life of Pope*.

Gosse's *From Shakespeare to Pope; 18 Century Literature*. The entire session. Monday, Wednesday, Friday, at 3 p. m.

REFERENCE BOOKS.

Scott and Saintsbury's Dryden, 18 vols.; Critical Essays on Dryden by Macaulay, Lowell, Matthew Arnold; Johnson's Life of

Dryden; Mitford's Life of Dryden; Elwin and Courthope's Pope, 10 vols.; Critical Essays on Pope by Addison, DeQuincey (3), Lowell, Matthew Arnold; Courthope's Life of Pope; Johnson's Life of Pope.

CHEMISTRY.

PROF. B. B. ROSS.

Instruction in this department embraces—

1. A course of lectures in general chemistry.
2. A course of lectures in industrial chemistry.
3. A course of lectures in agricultural chemistry.
4. Systematic laboratory work in connection with each course of lectures, for the practice of chemical analysis and chemical research.

1. Course in general chemistry: This consists of a series of lectures (three per week) extending throughout the entire session, and includes a discussion of the fundamental principles of chemical philosophy in connection with the history, preparation, properties and compounds of the metallic and non-metallic elements, with the main facts and principles of organic chemistry. In this course the more common applications of chemistry to the arts and manufactures are discussed. The apparatus used for experimental illustration is extensive, containing the newest and most approved instruments necessary for presenting the subject in the most attractive and instructive form.

REFERENCE BOOKS.

Roscoe & Schorlemmer, Fownes, Frankland, Remsen, Cooks's Chemical Philosophy, Chemical Journals.

2. The lectures on industrial chemistry (three per week) extend throughout the session, and include a discussion in detail of the processes and chemical principles involved in the most important applications of chemistry

in the arts and manufactures to the reduction of ores, the preparation of materials for food and drink, for clothing, shelter, illumination, cleansing, purifying, writing, printing, etc.

These lectures are amply illustrated by means of suitable specimens of raw materials and manufacturing products, together with models and diagrams.

REFERENCE BOOKS.

Wagner's Chemical Technology, Muspratt's Chemistry as applied to Arts and Manufacturing, Ure's Dictionary, Watt's Dictionary, Richardson and Watt's Chemical Technology, Percy's Metallurgy, Sadtler's Industrial Organic Chemistry.

3. Course in agricultural chemistry: This consists of lectures on chemistry in its applications to agriculture (two per week), and includes a thorough discussion of the origin, composition and classification of soils, the composition and growth of plants, the sources of plant food and how obtained, the improvement of soils, the manufacture and use of fertilizers, the chemical principles involved in the rotation of crops, the feeding of live stock, and the various operations carried on by the intelligent and successful agriculturist.

REFERENCE BOOKS.

Johnson's How Crops Grow and How Crops Feed, Lupton's Elementary Principles of Scientific Agriculture, Johnson and Cameron's Elements of Agricultural Chemistry, Storer's Agriculture in relation to Chemistry, scientific journals, reports of the United States Department of Agriculture, and the bulletins and reports of the various home and foreign agricultural departments and stations.

4. The course of systematic laboratory work: This course of practical work in the laboratory is carried on in connection with each course of lectures, and embraces the practical operation of chemical analysis and synthesis,

being varied somewhat to suit the individual object of the student.

The laboratories, which are open from 9 A. M. to 5 P. M., during six days in the week, are amply supplied with everything necessary for instruction in chemical manipulation, in the qualitative and quantitative analysis of soils, fertilizers, feed stuffs, sugar products, minerals, mineral waters, technical products, etc., and in the method of prosecuting chemical researches. Unusual facilities are offered to students who wish to devote their time to the special study of practical chemistry.

Each student on entering the chemical laboratory is furnished with a work table, a set of re-agent bottles, and the common reagents and apparatus used in qualitative and quantitative analysis. At the close of the session he will be credited with such articles as may be returned in good order; the value of those which have been injured or destroyed will be deducted from the deposit.

In addition to the analytical work above described, it is designed to introduce during the next session a short course in electro-plating.

Practical instruction in the electro-deposition of nickel, silver, gold, etc., upon other metals will be given, and, in addition, the applications of electrolysis to chemical analysis will be studied both theoretically and practically.

BOOKS USED.

In qualitative analysis—Jones, Fresenius, Plattner.

In quantitative analysis—Fresenius, Sutton, Rose, Bunsen, Rickett's Notes on Assaying, Mitchell's Manual of Practical Assaying.

In agricultural chemical analysis—Official methods of the Association of Agricultural Chemists.

Wiley's Principles and Practice of Agricultural Analysis.

CHEMICAL LABORATORY.

[For description of the building see page 15.]

The chemical apparatus recently purchased for the laboratory consists of a full supply of the most approved instruments for practical work and investigation. The building is supplied with

water and gas and every appliance required to meet the demands of modern scientific instruction and research. In addition to the apparatus usually supplied to first-class laboratories, there have been imported a new and improved Schmidt and Hensch's polariscope, four short-arm Becker Balances of latest pattern, Bunsen spectroscope, Zeiss microscope, and other instruments for delicate and accurate work.

BIOLOGY.

PROF. STEDMAN.

PRACTICAL BIOLOGY.—This subject is presented by lectures and laboratory work to the senior students in agriculture and chemistry. The first part of the year will be devoted to the study of zoology and entomology with special reference to practical agriculture. This will be followed by the study of bacteriology and mycology giving prominence to the causes of diseases of cultivated plants. Special attention will be given to methods employed in combatting the attacks of fungi and insects upon plants. The lectures will be illustrated as far as possible by actual specimens, and by the use of the stereopticon and oxy-hydrogen and electric arc light for micro-projection, and also by the use of several hundred lantern slides specially prepared for these lectures. The biological museum is primarily for the illustration of the lectures and contains several hundred marine invertebrates as well as representations of nearly all orders of animals.

The reference books will be announced to the classes. The department contains a carefully selected library of the standard works on biology and many rare and valuable works, besides current periodicals adapted to aid in the special investigations carried on in the laboratory.

Especial opportunities are offered to graduate students who desire to pursue advanced work and engage in original investigations.

FACILITIES FOR WORK.

At present three rooms in addition to the museum and plant laboratory are occupied by the department—an office, lecture room, and laboratory. The office contains the cabinet of fungi and insects, the technical library for the department, slate tables with a Zeiss microscope, re-agents, gas and water fittings. The work in the office consists of the examination, identification and cataloguing of the specimens, beside the special work peculiar to such an office. The cabinet is provided with tight drawers, for receiving the mounted specimens of fungi and insects.

LABORATORY.—Nine slate top tables are devoted to the use of students, there being 16 microscopes set apart for them.

Two small culture rooms contain the plate and test tube cultures of fungi and bacteria which are being studied in relation to the plant diseases they cause. Here they can be handled and studied with little danger of contamination from the dust of the laboratory. In these rooms are kept Rohrbeck thermostats fitted with automatic cut off burners and Lautenschlager's most recent thermoregulators for maintaining constant temperatures.

A Winkel microscope is kept here for the examination of cultures. It consists of stand No. 2, with condenser, triple revolver, homogeneous immersion lens 1-24 and 1-14, dry objectives No. 3 and No. 7, oculars 1, 3 and 5, and micrometer ocular.

A Winkel microscope is also kept for the use of the students, like the former, except the 1-24 homogeneous immersion lens.

The other pieces of apparatus are as follows:

Steam sterilizer, dry sterilizer, domestic still, instantaneous water heater, Pasteur filter, fine and common balances, apparatus for demonstrating intramolecular breathing of yeast, the Brendel models of parasitic and sapro-phytic fungi, bacteria and yeast plants, automatic device for rolling culture tubes of nutrient agar, microtomes and paraffine water bath.

There are also cases containing a large quantity of the various glass vessels, paper, dry and liquid dyes and re-agents, culture media, etc., required in modern investigation.

The laboratory is well lighted from southern and western exposure. All the rooms are well fitted with gas and water supply.

A laboratory has been constructed especially for conducting investigations on the diseases of plants. While this constitutes part of the equipment for the biologist in experiment station work, it will be at the disposal of the department for instruction.

HISTORY AND LATIN.

PROF. PETRIE.

HISTORY.

In this department the aim is not so much to memorize facts as to understand them. Strong emphasis is laid on the fact that history is not a succession of isolated facts but a progressive whole, each event being at once the cause and the effect of other events. The students are taught to investigate the growth of ideas and institutions, the rise and progress of great historical movements and the reciprocal influence of men and circumstances. Frequent use is made of diagrams, photographs, charts and maps, with which the department is well equipped. Constant practice in map drawing is insisted on in order to give precision to the geographical knowledge required. Instruction is given by text-books, lectures and class discussion, but a constant effort is made to stimulate to widen reading and research in the library.

In the freshman class, the subjects studied are the United States and England. The first term (two hours per week) is devoted to the history of the United States, the second term (two hours per week) to its government, and the third term (three hours per week) to the history of England.

In the sophomore class (three hours per week until March) the subject studied is General History.

In the junior and senior classes (six hours each per week) opportunity for special historical work is given to those students of the General Course who may elect it instead of laboratory work. A regular course of lectures

(two per week) will be given on American history, social, political and financial. Students will also investigate in the library under the direction of the professor topics connected with the lectures, and will report to the class the results of their research. These reports will be made the basis of general discussion. A series of special lectures will be given from time to time on the government of the leading nations of Europe and on current foreign events.

TEXT BOOKS.

Freshman class.—Chambers's Larger History of the United States, Macy's Our Government, Montgomery's English History.

Sophomore class.—Myers's General History.

Junior and Senior classes —Epochs of American History.

LATIN.

In this department two objects are kept in view: a knowledge of the language, and an appreciation of the literature.

In teaching the language the following methods are used: A systematic course is given in etymology and syntax. These are taught both deductively from a grammar and inductively from the Latin text read. Translation is constantly practiced, sometimes at sight, sometimes after being assigned for preparation. English passages based on a familiar author or illustrative of special constructions are translated into Latin, both orally and in writing. Simple conversation is carried on in Latin.

Special emphasis is laid upon the subject of Latin literature. In connection with every author studied in class there is prescribed a course of reading in English descriptive of his life, work and times. The artistic value of his writings is carefully studied and discussed, and frequent comparisons are made with modern writers.

TEXT BOOKS.

Freshman class.—Nepos, Virgil, Sallust, Grammar, Composition.

Sophomore class.—Virgil, Cicero, Jones's Latin Prose Composition.

Junior class.—Livy, Tacitus, Wilkins's Latin Literature, Miller's Latin Composition.

Senior class.—Horace, Plautus, Terence.

AGRICULTURE.

PROF. BONDURANT

The course of instruction in this department embraces: I, Soils; II, Plants; III, Domestic Animals.

The freshman class is taught by lectures and text-books, during the third term of the session.

The subjects taught are the treatment of soils, their classification, defects and remedies, causes of diminished fertility, and the means used to protect them from waste and to restore fertility, and the theory and practice of surface and sub-drainage.

These subjects are treated with special reference to the different classes of soil in Alabama and the Southern States.

In the sophomore class, in addition to the discussion of the physical properties and treatment of soils, the methods of studying their defects and their remedies are also considered.

The sources of the important elements of plant food and their use upon different soils and plants, methods of saving and applying farm manures, making composts, proportioning and applying commercial fertilizers, the relation of plant growth to soil and atmosphere, terracing and grading land to prevent washing, plows and plowing, and in fact everything connected with tilling the soil, pass under review as foundation works.

Southern agriculture is then treated; the history, nature and cultivation of field crops discussed as regards their adaptation to and treatment upon the soils of the Southern States,

Attention is also given the raising of stock, horses, sheep, swine and other animals, and to the proper feeding of dairy, beef cattle, and all farm stock.

In the junior class instruction is given in pomology, including the propagation of nursery stock, planting, manuring, pruning, cultivating, harvesting and marketing every species of fruit.

Lectures are delivered to this class upon subjects relating to agriculture, namely: a thorough and judicious system of rotation of crops, diversified farming, the selection, purchase, equipment and management of the farm, employment and management of labor.

Landscape gardening is also taught with special reference to the improvement of country houses.

Drawings and models of agricultural implements and farm products are used to illustrate the subjects treated in the lectures.

Reference will be made to suitable agricultural books, and especial reference to the experiments contained in bulletins of other agricultural stations, whenever applicable to the subject under discussion. In this department practical agriculture is combined with class instruction. Opportunities are given, and students are required, in the junior and sophomore classes to do practical field work of an educational character, under the direction of the professor.

The farm instruction will embrace the details of farm work, assisting in field and feeding experiments, which are conducted daily on the station farm, aiding in dairy work, care and management of farm stock, machinery, propagating fruits, grafting, budding, and pruning vines and fruit trees.

TEXT AND REFERENCE BOOKS.

(1) Winslow's Principles of Agriculture. (2) Gulley's Lessons in Agriculture. (3) Wrightson's Principles of Agricultural Prac-

tice. (4) Fream's Soils and their Properties. (5) Webb's Agriculture. (6) Norton's Elements of Scientific Agriculture. (7) Stewart's Irrigation for the Farm, Garden and Orchard. (8) Griffith on Manures. (9) Harris on Manures. (10) Mill's Silos and Ensilage. (11) Curtis on Stock. (12) Willard's Practical Dairy. (13) American Dairying, by H. B. Gurler. (14) Black's Cultivation of Fruits. (15) Thomas's Cultivation of Fruits. (16) Strong's Cultivation of Fruits. (17) Fuller's Grape Culturist.

MODERN LANGUAGES.

PROF. C. H. ROSS.

The following regular courses are given in French and German:

French—First Year: Three recitations a week. During this year the principal object is to acquire a thorough knowledge of the elements of grammar, and a correct pronunciation, together with facility in translating ordinary French. Reading is begun at an early stage, and the principles of grammar are illustrated and impressed by frequent exercises in rendering English into French.

Second Year: Three recitations a week. During this year, almost the same line of work is pursued as that begun in the previous year. More difficult and varied French is read, and careful instruction is given upon the laws of grammar, the construction of the language, and the history of the literature.

German—Two Years: Three recitations a week the first year, three a week the second year. In this course the aim and the methods are similar to those in French.

Post-graduate courses in French and German are offered. That in French during the past year consisted of a study of Moliere; that in German of a study of Goethe. An extra class was also formed for the study of Italian.

TEXT BOOKS.

French—*First Year*: Whitney's Brief French Grammar and Introductory French Reader; Jules Verne's Michel Strogoff; Pailleron's *Le Monde ou l'on s'ennuie*.

Second Year: Moliere's *Les Precieuses Ridicules* and *L'Avare*; Hugo's *Hernani* and *Selections*; Feuillet's *Le Roman d'un Jeune Homme Pauvre* (sight reading), Saintsbury's *Primer of French Literature*.

Post-graduate Course: *Les Precieuses Ridicules*, *Le Medecin Malgre Lui*, *Le Bourgeois Gentilhomme*, *Le Taruffe*, *L'Avare*, *Les Femmes Savantes*, *Le Misanthrope*, *L'Ecole des Femmes*, *La Malade Imaginaire*, *Les Fourberies de Scapin*; Oliphant's *Moliere*; Saintsbury's *Short History of French Literature*.

German—*First Year*: Otis's *Elementary German*, Grimm's *Kinder-und Haus-Maerchen*, Hauff's *Das Kalte Herz*, *Germania*.

Second Year: Schiller's *Ballads*, Heine's *Prosa*, Lessing's *Minna von Barnhelm*, *Lectures on German Literature*.

Post-graduate Course: Goethe's *Faust*; Lewes's *Goethe*, Sime's *Goethe*, Grimm's *Goethe*; Browning's *Goethe*; Hayward's *Goethe*; Scherer's *History of German Literature*.

Italian—*Italian Principia*, Pts. I & II.

ELECTRICAL ENGINEERING.

PROF. MCKISSICK.

The students in this course will study English, French, or German, physics, mathematics, &c., as now prescribed for the course of civil engineering in the junior and senior years; and in addition thereto, will prosecute their studies in electricity and mechanics, as herein prescribed.

COURSE IN ELECTRICAL ENGINEERING.

JUNIOR YEAR.

Four hours a week for the entire session are devoted to the study of the principles of electricity and magnetism.

The student is made familiar with the theoretical principles by experiments, illustrations, recitations, and lectures.

LABORATORY WORK.—Four hours per week are given to work in the laboratory. This includes management of batteries, construction of instruments, electrical measurements, verification of the principles upon which the measurements of current, electromotive force and resistance are based, etc.

TEXT BOOKS.

Ayrton's Practical Electricity, Desmond's Electricity for Engineers, S. P. Thompson's Electricity and Magnetism, Stewart and Gee's Practical Physics, Nichol's Laboratory Manual, Vol. I.

SENIOR YEAR.

In the senior year five hours per week are devoted to theoretical instruction in electricity and magnetism, supplemented by a course of lectures and practical demonstrations on the applications of electricity to lighting, electrical transmission of energy, electrical welding, telegraphy and telephony.

Encouragement is offered to advanced students for conducting original investigations, and opportunity is taken to stimulate a spirit of scientific inquiry. Courses of reading are suggested to such students in connection with their experimental work.

LABORATORY WORK.—Six hours per week are devoted to practical laboratory work, including construction of instruments, electrical measurements, electrolysis, and relation of electrical currents to heat and mechanical work, care and tests of dynamo, the adjustment and calibration of voltmeters and ammeters, electric lighting, management and care of accumulators, energy consumed in lamps, adjustment and care of arc lamps, proper wiring of buildings, the application of electricity to street railways, magnetic measurements, tests of transformers and motors.

DRAWING AND CONSTRUCTION.—Two hours per week in the senior year are devoted to the design and construction of electrical machinery. The student is required to make original designs of dynamos, motors, transformers, galvanometers, etc.

TEXT BOOKS.

Thompson's *Dynamo Electric Machinery*, Fleming's *Alternate Current Transformer*, Nichol's *Laboratory Manual*, Vol. II.

REFERENCE BOOKS.

Treatise on Electricity and Magnetism, Vols. I and II, by Gordon; Electricity and Magnetism, by Clerk Maxwell; Emtage's *Introduction to the Mathematical Theory of Electricity and Magnetism*; Kempe's *Electrical Testing*; Dredge's *Electric Illumination*, Vols. I and II; *Dynamo Electric Machinery*, by Carl Hering; *The Electro-Motor and its Applications*, by Wetzler and Martin; *Electric Transmission*, by Kapp; *Electric Lighting* by Atkinson; *Electric Light Installations*, by Salomons; *Alternating Currents of Electricity*, by Blakesley; *London Electrician*; *Proceedings of American Institute of Electrical Engineers*; Thompson's *Electro-Magnet*.

EQUIPMENT.

The electrical laboratory has a complete line of batteries, call-bells, annunciators, telegraph sounders, relays, keys, magnets, and all apparatus necessary for first year students in electrical engineering. The equipment comprises many fine instruments of precision: Sir Wm. Thomson's standard 100 ampere balance (either for direct or alternating currents); Sir Wm. Thomson's graded current galvanometer, reading to 600 amperes; also, his graded potential galvanometer, reading to 600 volts; Weston alternating current voltmeter, Weston direct reading watt meter, Queen's "Acme" testing set, Kelvin electrostatic voltmeter, Cardew voltmeter (for direct or alternating currents), reading to 150 volts; Weston's standard ammeter and voltmeter, box of resistance coils; Queen's magnetic vane voltmeter, and ammeter, standard $\frac{1}{2}$ micro-farad condenser and Sabine key; Thompson watt-meter ballistic reflecting galvanometer, mirror galvanometer,

Fein ammeter and voltmeter, Ayston & Perry ammeter, Kohl's solenoid ammeter, Wood ammeter, Deprez ammeter, Hartman & Braun voltmeter, D'Arsonval galvanometer, Hughe's induction balance, tasimeter, microphone, telephones, electrolytic apparatus and several mirror and other galvanometers for first year students. A battery of fifty-five Julien accumulators has been installed in the laboratory, and a like battery in the department of botany and geology.

In the dynamo room the following are installed: One Weston 150 volt, 20 ampere dynamo, with rheostat; one Brush 6 arc-light dynamo, with regulator and six lamps; one Edison compound wound 12 kilo-watt generator; a Tompson-Houston 110 volt, 75 ampere generator; two street car motors used as either direct or alternating current generators or motors, two polyphase induction motors; a Crocker-Wheeler one-horse power motor and rheostat, and one two phase alternator, and 500 volt generator, made by special students, furnish current to laboratory, and light up the different buildings.

The dynamos occupy a separate brick building, 50 x 32 feet, and are operated by a 35 horse-power Westinghouse vertical engine, and a 25 horse-power Atlas engine.

This department, being provided with Sir Wm. Thomson's standard electrical instruments for exact measurements, will calibrate, free of expense, any ammeter or voltmeter that may be sent to the College.

An electric-motor made by students, supplied with current from a generator at a distance of 3,000 feet, operates a gin, gin press, ensilage cutter and feed cutter at the experiment station farm. This motor not only subserves a useful purpose in the operation of these machines, but is an excellent illustration of the electric transmission of power.



MECHANICAL ENGINEERING AND MECHANIC ARTS.

PROF. WILMORE.

B. H. CRENSHAW, } ASSISTANTS.
R. J. TRAMMELL, }

The course in Manual Training covers three years, as follows: First year, wood-working—carpentry and turning; second year, pattern-making and foundry and forge work—moulding, casting and smithing; third year, machine shop—chipping and filing and machine work in metals.

This course is obligatory upon the students of the three lower classes. For satisfactory reasons a student may be excused from this laboratory work by the Faculty.

The full work of each class is six hours per week, in three exercises of two hours each.

The power for running the apparatus in this department is derived from a twenty-five horse power Harris-Corliss automatic engine, which is supplied with steam by a thirty horse-power steel horizontal tubular boiler. A steam pump and a heater for the feed water form a part of the steam apparatus. For the steam plant a substantial brick boiler-house and chimney have been erected.

The equipment for the wood-working shop comprises the following: 30 wood-working benches, each with complete set of carpenter's tools; 24 turning-lathes, 10-inch swing, each with complete set of tools; 1 double circular saw; 1 band saw; 1 board-planing machine; 1 buzz planer; 1 large pattern-maker's lathe, 16 inch swing; 1 36-inch grindstone. In addition to these, the tool room is supplied with a variety of extra hand-tools for special work.

The equipment for the foundry consists of moulding-benches for 18 students, each supplied with a complete set of moulder's tools; a 14-inch cupola, with all modern improvements, capable of

melting 1,000 pounds of iron per hour ; a brass furnace in which can be melted 100 pounds of brass at a heat, with a set of crucible tongs, etc. Also a full supply of ladles, large and small moulding flasks, special tools, etc.

The forge shop equipment consists of 16 hand forges of new pattern, each with a set of smith's tools, anvil, etc. The blast for all the forges is supplied by a No. 3 Sturtevant steel pressure blower (which also furnishes blast for the foundry cupola), and a No. 15 Sturtevant exhaust blower draws the smoke from the fires into the smoke-flues and forces it out through the chimney.

The machine department occupies a brick building 30x50 feet, and is equipped with 6 engine-lathes (screw-cutting), 14-inch swing, 6-foot bed ; 2 engine-lathes, 16 inch swing (one with taper attachment) ; 1 engine lathe, 18-inch swing, with compound rest and taper attachment ; 1 screw cutting lathe, 12-inch swing ; 1 speed lathe, 10 inch swing ; 1 20 inch drill press (power feed) ; 1 10-inch sensitive drill ; 1 15-inch shaper ; 1 22-inch x 22-inch x 5-feet planer ; 1 universal milling machine ; 1 corundum tool grinder (14 inch wheel) ; 1 bench grinder ; 1 post drill press, 14-inch ; 1 universal cutter and reamer grinder ; 1 Brown & Sharpe universal grinding machine ; 1 power hack saw. A part of this room is set apart for vise-work, chipping and filing ; and benches for 12 students are provided, each with vise and sets of files, chisels, hammers, etc. In the tool-room is to be found a good supply of machinists' tools for general shop use, such as lathe and drill chucks, drills, reamers, taps, dies, gauges, files, cutting and measuring tools, and special appliances for machine work, with machine for grinding twist drills.

The nature of the work in each department is as follows :

FIRST YEAR.

1. A course of carpentry or hand work covering the first two terms.

The lessons include instruction on the nature and use of tools, instruction and practice in shop drawing, elementary work with plane, saw, chisel, different kinds of joints, timber-splices, cross joints, mortise and tenon, mitre and frame work, dovetail work, comprising different kinds of

joints used in cabinet making, light cabinet work, examples in building, framing, roof-trusses, etc.

II. A course in turning, extending through the third term. The lessons comprise, first, nature and use of lathe and tools, plain straight turning caliper work to different diameters and lengths, simple and compound curves, screw plate and chuck-work, hollow and spherical turning.

SECOND YEAR.

I. A course in forge work in iron and steel, occupying the first term. The lessons are arranged so that the students, in making the series of objects, become familiar with the nature of the metals and the successive steps in working them by hand into simple and complex forms, as drawing, upsetting, bending, cutting, punching, welding by various methods, tool-forging, tempering, hardening, etc.

II. A course in pattern-making, covering the second term. The work includes a variety of examples of whole and split patterns, core work, etc., giving the students familiarity with the use of patterns for general moulding.

III. A course in moulding and casting in iron and brass occupying the third term. The work consists for the most part of small articles, such as light machine parts, but a sufficient variety of forms are introduced for the student to acquire a good general and practical knowledge of the usual methods and appliances used in light foundry work. Most of the work is in green sand in two part flasks; core work is also given, and some three part flask and some dry sand work is introduced.

The same patterns which have been previously made by students are used, besides special patterns for occasional larger or more complicated work. Instruction and practice is given in working the cupola, each student in turn taking charge of a melting.

In connection with this second year work, a series of lectures is given on the metallurgy and working of the metals used in the industrial arts, cast and wrought iron, steel, brass, etc.

THIRD YEAR.

I. A course of chipping and filing, covering the first term. The lessons comprise work on cast and wrought iron; chipping to line on flat and curved surfaces, key-seating, etc.; filing and finishing to line (straight and curved), surface filing and finishing, fitting, slotting, dovetail work, sawing, pin and screw filing, surface finishing with scraper, etc.

II. Machine work occupying the remainder of the year. The work includes cast and wrought iron, steel and brass: turning to various diameters and lengths, taper turning, facing with chuck and face plate, drilling—both in lathe and drill press—reaming, boring, screw-cutting in lathe and with taps and dies, planing, slotting, etc., with planer and shaper, milling various forms with the milling machine, including exercises in making taps, reamers, etc., fitting, grinding, polishing, etc.

Lectures are also given during the year on various subjects connected with machine work in metals: such as forms, construction and use of the various machines, cutting tools, gearing, gauges, screw threads, etc. During the last term some piece of construction work is given the classes.

All of the work is done from blue prints made by the class in drawing. In the construction work, the student is given a blue print and the material for a certain part. He is then encouraged to study the work and plan the best method of doing it.

COKE BIN

BRASS
FURNACE

CORE BENCH

ARTS, ST. ALA.

BY GREENSHAW, DEL.

FOUN

30' X 20'

18 MOULDING

MACHINE ROOM

- 10 LATHES (10)
- 1 LATHE
- 1 PRESS
- 1 GRINDER
- 1 MILL
- 1 SHAPING MACHINE
- 1 UNIVERSAL GRINDING MACHINE
- 1 CUTTER & REAMER GRINDER
- 1 PLANING & FILING BENCHES
- 1 GRINDER
- 1 POWER HACK SAW.

ENGINE ROOM

- 2 ENGINES
- 1 SLIDE-VALVE ENGINE
- 1 BY STUDENTS.

FOR

30'

16 F

BLAST

EXHAUST

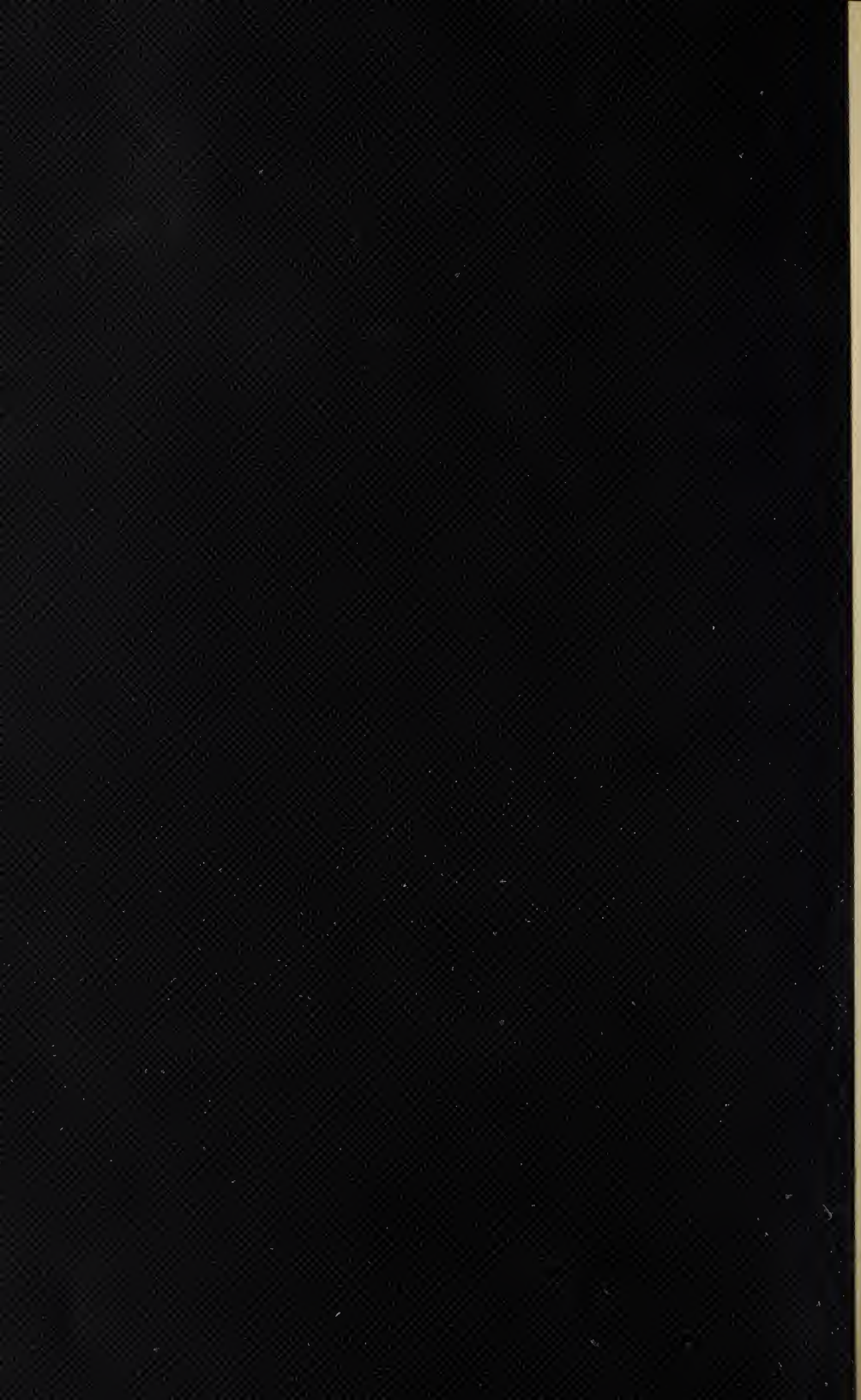
WOOD-WORK BENCHES

COAL ROOM
12' X 20'

BOILER

CHIMNEY
60 FEET

STEAM PIPE
ELECTRICAL LAB



MECHANICAL ENGINEERING.

JUNIOR YEAR.

Elementary Mathematics.—Three hours a week for the first term are devoted to this subject. The fundamental laws underlying all mechanical science and the mechanics of liquids, gases and vapors are studied.

Principles of Mechanism.—Three recitations per week during the second and third terms are devoted to this subject.

Under this head machines are analyzed and their elementary combinations of mechanism studied. The communication of motion by gear wheels, belts, cams, screws and link-work, the different ways of obtaining definite velocity ratios and definite changes of velocity, parallel motions and quick return motions as well as the designing of trains of mechanism for various purposes, together with the theoretical forms of teeth for gear wheels to transmit the motion through these trains, are investigated under this subject.

Mechanical Drawing.—During the first term the students make drawings to exact scale, of some of the simpler machines. The student takes his own measurements and makes his own sketches from which to make the finished drawing.

The first eight weeks of the second term are devoted to detail drawing, tracing and the art of blue printing. The student is given a machine or a part of a machine and is required to make detail working drawings of the same.

This is followed by work intended to be supplemental to the work in mechanism. Involute and epicycloidal gear wheels, bevel wheels and endless screws are designed and drawn to scale from data given by the instructor.

Laboratory Work.—The laboratory work will consist of hand work in iron and machine work in iron, as given in the course in mechanic arts in the third year.

TEXT BOOKS

Wood's Elementary Mechanics ; Stahl and Wood's Elementary Mechanism.

SENIOR YEAR.

Steam Engine.—The first term five hours per week will be given to the study of the theory and efficiency of the steam engine, with discussions of the effects of condensation in cylinder, action of fly-wheels, effect of jacketing, etc. Simple and compound engines, various valves and cut-off motions, and the principal types of modern engines are studied. Special attention is given to the steam engine indicator.

Graphical Statics of Mechanism.—Eight weeks of the second term, five hours per week, will be given to the study of this subject. The advantage of graphical over analytical methods is generally recognized, and new applications of the former are constantly being made. By its use, the forces acting in every part of a machine may be determined, both in direction and intensity, without the use of a mathematical formula.

Machine Design.—During the remainder of the year the subject of machine design will be studied in connection with the strength of materials, the latter being studied mainly from actual experiments made on the testing machine.

Laboratory Work.—The students are not only taught how to calibrate and use the different instruments, but they are brought in contact with engineering appliances under practical working conditions.

Thoroughness of work is sought rather than the performance of a large number of experiments.

The following course has been arranged :

Calibration of steam gauge ; calibration of indicator spring ; calibration of thermometer ; calibration of scales and balances ; calorimeter tests with barrel, separating and throttling calo-

rimeters ; boiler test with determination of the quality of steam and analysis of flue gas ; efficiency test of engine with brake and indicator power measurement ; test of hot air pumping engine ; efficiency and duty of a steam pump ; tensional, compressional and transverse tests of cast iron, wrought iron, steel and wood, in which are observed the limit of elasticity, the ultimate breaking strength and the modulus of elasticity.

This class usually makes a test of some electric plant or mill sometime in the last term.

The apparatus for carrying on this work consists of a 25-horse power Harris-Corliss engine, a 35-horse power Westinghouse engine, a 25-horse power Atlas engine, two 9-horse power engines constructed by students in the shops, a small engine and boiler especially for making efficiency tests, a duplex Deane steam pump, an Ericsson hot air engine, a Westinghouse air pump, four steam engine indicators, a separating calorimeter, thermometers, pyrometers, scales, a standard steam gauge with apparatus for testing steam gauges, a Crosby dead weight tester for correcting the standard gauge, a 35,000-pound testing machine, and a Henning micrometer extensometer.

TEXT BOOKS.

Holmes' Steam Engine, Herrman-Smith's Graphical Statics of Mechanism ; Unwin's Machine Design.

REFERENCE BOOKS.*

The library contains a number of standard works on the various subjects studied, and the students are referred to them constantly for more extended treatment of many points that come up in class.

POST-GRADUATE COURSE.

Dynamometers.—This includes dynamometers and the measurement of power. Absorption and transmission dynamometers are studied, with their application and use in testing steam engines.

Valve Gears—The different forms of valve gears of steam engines are studied, and problems in designing gears are worked out.

Thermodynamics of the Steam Engine.—This subject is studied theoretically and practically, and attempts a complete analysis of the action of steam in an engine.

Laboratory Work.—As much advanced laboratory work will be given as can be arranged with the appliances at hand.

TEXT BOOKS.

Flather's Dynamometers and Measurement of Power, Spangler's Valve Gears, Peabody's Thermodynamics of the Steam Engine.

MILITARY SCIENCE AND TACTICS.

LIEUT. J. H. WILLS, U. S. ARMY, COMMANDANT.

Military science and tactics are required by law to be taught in this institution. This law is faithfully carried out by imparting to each student, not physically incapacitated to bear arms, practical instruction in the school of the soldier, of the company and of the battalion in close and extended order, also in guard mountings, inspections, dress parades, reviews, etc.

Under section 1225, U. S. Revised Statutes, the College is provided with modern cadet rifles and accoutrements and two pieces of field artillery. Ammunition for practice firing is used under the direction of an experienced officer. The exercises in target practice and artillery drill begin the first day of the third term, March 23d.

The following uniform of standard cadet gray cloth has been prescribed for dress, viz.: Coats and pants as worn at West Point, with sack coat for fatigue, dark blue cadet cap. A neat and serviceable uniform can be obtained here at \$17 to \$18. This is less expensive than the usual clothing. All students are required to wear this uniform during the session.

The entire body of students is divided into companies. The officers are selected for proficiency in drill, deport-

ment, and studies. Each company is officered by one captain, two 1st lieutenants, one 2d lieutenant, and with a proper number of non-commissioned officers. The officers and non-commissioned officers are distinguished by appropriate insignia of rank. These appointments are confirmed by the President on nomination of the Commandant.

The junior class recites once a week in the United States Infantry Tactics.

The senior class recites once a week in "Notes on Military Science."

PHYSIOLOGY AND VETERINARY SCIENCE.

PROFESSOR CARY.

PHYSIOLOGY.

The sophomore class during the second and third terms study human physiology.

It is the aim of the department to familiarize the student with the gross anatomy and the functions of the various parts of the human body; moreover, due attention is given to the laws of health or conditions most favorable to a healthy action of the organs of the human body.

Instruction is given by lectures which are illustrated by charts, drawings, models of the organs of the body and by a human skeleton.

The department is now supplied with rooms where the students can dissect some of the smaller animals and thus see the organs, tissues and regions as exhibited in a few of the lower animals.

VETERINARY SCIENCE AND ART.

During the entire junior and senior years the students in the agricultural and chemical course of study devote to this work two hours per week in the class room and three to five hours per week in clinical practice.

The lectures are arranged with special reference to the students who are interested in horses or other domestic animals; also to those students who contemplate studying human or veterinary medicine. While it is not the aim to give a complete course in veterinary medicine, we attempt to present the general principles of comparative medicine with such special applications as are adapted to the conditions and wants of the students.

Special attention is given to the exterior anatomy of the horse, while comparative anatomy is presented mainly in connection with the study of the diseases of the different apparatus of the horse or other domestic animals.

Lameness in the horse, minor surgery, the actions and uses of the most common medicines, the principles and practice of comparative medicine, the methods of meat inspection, and the ways of protecting the health of man and domestic animals, are considered in as plain and practical manner as the time allotted to each subject will permit. Post mortem examinations and the dissection of domestic animals are used as object lessons in the study of general pathology and anatomy.

To the post-graduate student this department furnishes work in histology, bacteriology and pathology.

The department of physiology and veterinary science is now located in a new building which consists of a two-story portion, containing four laboratory rooms on the second floor and a lecture room, museum and office on the lower floor; and a one-story part which contains an operating room and a hospital ward with two box stalls and four open single stalls.

The building is supplied with water and gas, and the laboratory is now equipped for work. The museum contains the skeletons of the horse, the ox, the sheep, and the hog, and a human skeleton. It also contains anatomical models of the various parts and organs of the human body and models of many parts of the horse, the ox, and the other domestic animals. It also contains a collection of pathological and anatomical specimens, and one of animal parasites.

The cases for clinical work have been numerous. During 1894 there were three hundred and sixty cases handled by the department.

POST-GRADUATE DEGREES.

The Post-graduate Degrees are—MASTER OF SCIENCE, MINING ENGINEER, CIVIL ENGINEER, and ELECTRICAL and MECHANICAL ENGINEER.

A post-graduate degree may be obtained by a graduate of this College, or of any other institution of equal grade, by one year's residence at the College, spent in the successful prosecution of a course of study approved by the faculty.

Candidates must also present to the faculty a satisfactory thesis, showing independent investigation upon some subject pertaining to their course, and must pass an examination at the close of each term on the course of study prescribed, in which he must attain a grade of 75 per cent. The examination is written, and also oral in the presence of the faculty.

Applicants for post-graduate degrees are, by order of the trustees, permitted to matriculate without payment of fees.

They are subject to the general regulations as other students, but are exempt from all military duty.

Resident graduates that are not candidates for a degree, are permitted to matriculate and prosecute the studies in any department of the College, without payment of regular fees.

The following courses are prescribed for the degrees named :

Mining Engineer.—Geology, Civil Engineering, Chemistry.

Civil Engineer.—Civil Engineering, Mathematics, Analytical Mechanics.

Electrical and Mechanical Engineer.—Electrical Engineering, Mechanical Engineering, Analytical Mechanics or Mathematics.

Master of Science.—Studies in three departments, in two of which the candidate must have previously completed the full course of the senior class.

A certificate of proficiency will be given when any one subject of a post-graduate course is satisfactorily completed.

DISTINCTIONS.

Distinctions are awarded in the different subjects of each class to those students whose grade for the entire year is above 90 per cent.

Certificates of Distinction are awarded in public on commencement day to those who obtain an average of 90 per cent. in all the prescribed studies of a regular class; and also to those who obtain three distinctions in the freshman class, four in the sophomore class, five in the junior class, and six in the senior class, provided they have satisfactorily passed all the regular examinations of that session, and have not received forty demerits during the year.

PHOTOGRAPHY.

During the session there will be given by Professor Mell a course of twelve lectures on photography. This course will be elective, and the instruction will be open to any student that may desire to learn how to make pictures. It will be necessary for each student to provide himself with an outfit that will cost from \$11.50 to \$16.00.

RECORDS AND CIRCULARS.

Daily records of the various exercises of the classes are kept by the officers of instruction.

From the record a monthly circular, or statement, is sent to the parent or guardian.

EXAMINATIONS.

Written monthly examinations on the studies of the month are held by each professor.

At the end of each term written examinations, or written and oral, are held on the studies passed over during that term.

Special examinations are held only by order of the faculty, and in no case will private examinations be permitted.

Students falling below the minimum grade at the final examination, can be promoted to full standing in the next higher class, only on satisfactory examinations at the opening of the next session.

It is required that every student who enters the College shall remain through the examinations at the end of the term. Leaves of absence and honorable discharges will, therefore, not be granted within three weeks of the examination, except in extreme cases.

LIBRARY.

The library occupies an elegant, well-lighted room in the main building, and also two smaller adjacent rooms: It contains about 8,000 volumes, including valuable reference and scientific books, with select editions of standard authors, and others suitable for students, carefully and recently selected. It is kept open eight hours daily for the use of students as a reading-room, and is thus made an important educational feature.

MUSEUM.

The museum occupies a large room in the third story. It is provided with suitable cases and is equipped with valuable specimens and models of an instructive character.

DISCIPLINE.

The government of the College is administered by the President and faculty, in accordance with the code of laws and regulations enacted by the trustees.

Attention to study and punctuality in attendance on recitations and all other duties, are required of every student. Students are prohibited from having in their possession arms or weapons not issued for the performance of military duty, and also from using, or causing to be brought into the College limits, intoxicating liquors.

MILITARY DRILL.

There are three regular military drills each week, and all undergraduate students, not physically incapacitated to bear arms, are required to engage in these exercises.

The drills are short, and the duty involves no hardships. The military drill is a health-giving exercise, and its good effects in the development of the *physique* and improvement of the carriage of the cadet are manifest.

Privates of the senior class who are candidates for graduation may be excused by the President from all military drills, and also students over twenty-one years of age at the time of entering College that are permitted to devote their time to one special study, as chemistry, agriculture, etc.

RELIGIOUS SERVICE.

Religious services are held every morning in the chapel.

All students are required to attend these exercises, and also to attend the church of their choice at least once on Sunday.

Opportunities are also offered for attending Bible classes every Sunday.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

This Association is regularly organized, and through its weekly meetings exerts a wholesome Christian influence among the students of the College.

The first week of the session the trains will be met by a committee of the Association, whose business will be to give information to, or assist in any way it can, the students entering College for the first time. The Association is commended to all the students.

The following are the officers :

H. H. SMITH, '95, President.

S. L. COLEMAN, '95, Vice-President.

J. A. GROVES, '96, Recording Secretary.

W. H. MCBRYDE, '97, Corresponding Secretary.

J. L. MOLDER, '96, Treasurer.

GYMNASIUM.

The fourth floor of the main building is one large attic-room, well lighted and ventilated. It has been supplied with a number of such appliances as are used in a gymnasium, and is used for athletic exercises by the students, in the afternoon, under prescribed regulations.

LOCATION.

The College is situated in the town of Auburn, fifty-nine miles east of Montgomery, on the line of the Western Railroad.

The region is high and healthful, noted for its general good health and freedom from malaria, having an elevation of eight hundred and twenty-six feet above tide water. By statute of the State, the sale of spirituous liquors and keeping saloons of any kind are forbidden.

BOARDING.

The College has no barracks or dormitories, and the students board with families in the town of Auburn, and thus enjoy all the protecting and beneficial influences of the family circle.

For each house an inspector is appointed, whose duty it is to report those who, without permission, leave their rooms after "call to quarters," or are guilty of any violation of order. The report of the inspector is made to the Commandant on alternate days of the week.

Students, after selecting their boarding-houses, are not permitted to make changes without obtaining permission from the President, and this permission is given only at the close of a term, except for special reasons.

EXPENSES.

There is no charge for tuition.

Incidental fee, per half session.	\$ 2 50
Library fee, per half session.	1 00
Surgeon's fee, per half session.	2 50
	6 00

These fees are payable, \$6.00 on matriculation and \$6.00 on February 1st. By order of the trustees no fees can be remitted.

For students entering after January 1st, the fees for a half session only are required.

Board, per month, with fuel and lights. . . . \$12 to 15 00

EXPENSES FOR COLLEGE YEAR.

Fees.	\$ 12 00 to \$ 12 00	
Board, lodging, fuel and lights. . . .	108 00 to	135 00
Washing.	9 00 to	9 00
Books, etc., say.	8 00 to	15 00
Total.	\$137 00	\$171 00

UNIFORM.

A uniform of cadet gray cloth is prescribed, which all undergraduate students are required to wear during the session. The uniforms are made by a contractor of excellent cloth manufactured at the Charlottesville mills. This suit, including cap, costs about \$16.50. It is neat and serviceable, and less expensive than ordinary clothing.

CONTINGENT FEE.

A contingent fee of five dollars is required to be deposited by each student on matriculation, to cover any special or general damage to college property for which he may be liable.

At the close of the session the whole of the contingent fee, or the unexpended balance, is refunded to the student.

AMOUNT OF DEPOSIT.

Each student on entering College should deposit with the Treasurer not less than \$50.00, to pay the expenses of fees, one month's board, uniform, books, etc.

FUNDS OF STUDENTS.

Parents and guardians are advised to deposit with the Treasurer of the College all funds desired for sons or wards, whether for regular charges of College fees or board, or for any other purpose. It is the duty of this officer to keep safely all funds placed in his hands, and to pay all expenses incurred by the students, including board, uniform, books, etc., when approved.

When funds are deposited, checks are drawn on the Treasurer of the College by the cadet to pay his necessary expenses. These checks are paid only when approved by the President. This approval is given only for necessary expenses, as stated in the catalogue, unless specially requested in writing by the parent.

The College cannot be held responsible for the expenses of a student, unless the funds are deposited with the Treasurer. No student should be permitted to have a large amount of pocket money, as it brings only trouble and encourages idleness.

THESIS.

Each applicant for a degree is required to write and submit to the faculty an essay or oration and read or deliver the same at commencement, if required by the faculty.

It must be given to the Professor of English by the first of May.

LITERARY SOCIETIES.

There are two literary societies connected with the College—the Wirt and the Websterian. Each has a hall in the main building.

These societies hold celebrations on the evenings of Thanksgiving Day and 22nd of February, and also during commencement week. They elect annually, with the approval of the faculty, an orator to represent them at the close of the year.

EXERCISES IN ELOCUTION.

On every Saturday morning, immediately after chapel services, oratorical exercises in declamation and in original orations are

conducted by the Professor of English, in presence of the faculty and students.

The *first and second terms* the students of the junior and sophomore classes are exercised in original orations and declamation.

The *second and third terms* the members of the senior class read essays or deliver original orations.

SOCIETY OF THE ALUMNI.

The annual alumni oration is delivered by a member of the society, in Langdon Hall, on ALUMNI DAY, Tuesday of commencement week. The following are the officers of the society :

C. H. ROSS, '86, President.

C. W. ASHCRAFT, '88, Vice-President.

C. C. THACH, '77, Secretary and Treasurer.

R. H. THACH, '85, Orator for 1895.

SURGEON.

The Surgeon is required to be present at the College daily, to visit at their quarters the cadets that are reported sick, and to give all requisite medical attention without other charge than the regular surgeon's fee, paid on entering College.

ACADEMIC YEAR.

The academic year for 1895-96 commences on Wednesday, 11th September, 1895 (*second Wednesday after first Monday*), and ends on Wednesday, 10th June, 1896, (*second Wednesday after first Monday*), which is commencement day.

It is divided into three terms. The first term extends from the opening of the session to the 20th of December; the second term begins December 30th, and ends March 21st; the third term continues from March the 21st to the close of the session.

RESOLUTION OF THE TRUSTEES.

The following resolution was adopted by the trustees :

That in view of increased facilities for instruction in agriculture and the technical departments of education now possessed by this College, especially in the department of mechanic arts, made possible by the recent donation from the State, the faculty are authorized, in addition to the legal name of this College, to print on the catalogue the words ALABAMA POLYTECHNIC INSTITUTE, as significant of the expanded system of practical instruction in industrial science in the course of education now provided for.

DONATIONS TO LIBRARY.

W. Aldrich—Farming Corporations.

H. S. Salt—Animal Rights.

Arthur Pew—Government Railroads.

Babcock and Wilcox Co.—Steam. Its generation and use.

P. H. Mell, Jr.—Mell's Decisions on Parliamentary Practice.

R. P. Williams—The Apostolic Fathers.

Secretary of Interior—Senate and House Executive and Miscellaneous Documents, Memorial Addresses, Reports, etc.—164 vols.

Hon. W. C. Oates and Hon. G. P. Harrison—Congressional Record, and 3 vols. War of the Rebellion Reports.

Russian Government—World's Fair Report.

Commissioner of Education—8 Pamphlets on American Educational History.

Commissioner of Finance—47 Pamphlets on Tariff Reports.

University of Wisconsin—4 Pamphlets Engineering Series.

DONATIONS TO ELECTRICAL AND MECHANICAL DEPARTMENTS.

Baxter Electric Motor Co., Baltimore, Md.—Two street car motors, 20 horse power each.

General Electric Co., Atlanta, Ga.—One lightning arrester.

Hill Clutch Works, Cleveland, O.—One friction clutch pulley.

Magnolia Metal Co., New York—Eighteen copies of "The Practical Engineer" for distribution to the senior class.

Niles Tool Works, Hamilton, O.—Two large photographs, framed, showing machinery.

The Lane & Bodley Co.—Large photograph of Columbian Corliss engine.

The Consolidated Safety Valve Co., N. Y.—Sectional model of locomotive pop safety valve.

The Ames Iron Works, Oswego, N. Y.—Two framed engravings of engines.

Allis Engine Works, Milwaukee, Wis.—Engraving of engine.

Frick Co., Waynesboro, Pa.—Four photographs of engines and ice machines.

Deane Steam Pump Co., Holyoke, Mass.—Duplex steam pump complete.

Lukeins Iron and Steel Co., Coatsville, Pa.—Flanged boiler head; two Huston patent boiler braces.

Mr. W. H. Parrish, President Gulf Red Cedar Co., Greenville, Ala.—Cedar lumber.

PERIODICALS.

The following periodicals are regularly received in the library and are accessible to students.

LITERARY.

QUARTERLY.

Economic Journal.	Quarterly Journal of Economics.
Edinburgh Review.	Quarterly Review.
Political Science Quarterly.	Sewanee Review.

MONTHLY.

Atlantic Monthly.	Fortnightly Review.
Blackwood's Magazine.	Forum.
Book Buyer.	Harper's Monthly.
Book Reviews.	McClure's Magazine.
Century Magazine.	Nineteenth Century.
Contemporary Review.	North American Review.
Cosmopolitan.	Review of Reviews.
Eclectic Monthly.	Scribner's Magazine.
Education.	
Educational Review.	

WEEKLY.

Academy.	Independent (New York).
Athenæum.	Literary World (Boston).
Critic.	Nation.
Dial.	Saturday Review.
Harper's Weekly.	Spectator.

SCIENTIFIC.

Agricultural Science.
Agricultural Society Journal.
American Agriculturalist.
American Cultivator.
American Gardening.
American Geologist.
American Journal of Mathematics.
American Journal of Science.
American Machinist.
American Meteorological Journal.
American Monthly Microscopical Journal.
American Naturalist.
Analyst
Anatomischer Anzeiger.
Annales de Chemie et de Physique.
Annales des Sciences Naturelles.
Annals of Botany.
Annals of Mathematics.
Anthony's Photographic Bulletin.
Archives de Biologie.
Archives de Zoologie.
Archives fuer Mikroskopische Anatomie.
Berichte der Deutschen Chemischen Gesellschaft.
British Journal of Photography.
Botanical Gazette.
Builder and Woodworker.
Bulletin Torrey Botanical Club.
Cassier's Magazine.
Chemical News.
Centralblatt fuer Bacteriologie.

Country Gentleman and Cultivator.

Deutsche Zeitschrift fuer Tiermedizin.

Electrical Engineer.

Electrical Review.

Electrical World.

Electrician.

Engineering (Londôn).

Engineering and Mining Journal.

Engineering News.

Engraver and Printer.

Farmer's Gazette (New South Wales).

Farmer's Advocate.

Florida Farmer and Fruit Grower.

Garden and Forest.

Hufschmied.

Journal de l'Anatomie et de Physiologie.

Journal of American Chemical Society.

Journal of Botany.

Journal of Comparative Pathology and Therapeutics.

Journal of Franklin Institute.

Journal of Geology.

Journal of Horticulture.

Journal of Morphology.

Journal of New York Microscopical Society.

Mehan's Monthly.

Natural Science.

Nature.

Pharmaceutical Journal.

Photographer (St. Louis).

Photographic Times.

Popular Science Monthly.

Prairie Farmer.

Proceedings of the Academy of Natural Science of Philadelphia.

Quarterly Journal of Microscopical Science.

Rural New Yorker.

Science.

Scientific American.

Sibley Journal of Engineering.

Southern Cultivator.

Southern Farm.

Southern Planter.

Veterinary Journal.

Veterinary Magazine.

Western Rural.

Wilson's Photographic Magazine.

Zeitschrift fuer Fleisch und Milch Hygiene.

Zeitschrift fuer vergleichende Augenheilkunde.

Zoologischer Anzeiger.

PUBLIC LECTURES DELIVERED AT THE COLLEGE
DURING SESSION 1894-95.

Dr. Broun—How we Hear.

Prof. Thach—Sir Walter Scott.

Dr. Petrie—Washington City.

Dr. Cary—Conformation of the Horse.

Dr. C. H. Ross—Names.

Dr. Mell—Plant Life.

Prof. Stedman—Biology of Coral Reefs.

Prof. B. B. Ross—Technical Chemistry.

PUBLIC LECTURES FOR SESSION 1895-96.

Dr. Broun—Lunar Influences Real and Imaginary.

Prof. Smith—Reminiscences of a Schoolmaster.

Dr. Mell—Erosion of Continents.

Prof. Thach—Thackeray's Life and Works.

Dr. Petrie—Benjamin Franklin.

Prof. Bondurant—The Southern Labor Problem.

Prof. McKissick—Phenomena of Alternating Currents.

Prof. Stedman—Hydroids and Jelly Fish.

Prof. B. B. Ross—Technical Application of Chemistry.

Dr. C. H. Ross—Americanisms.

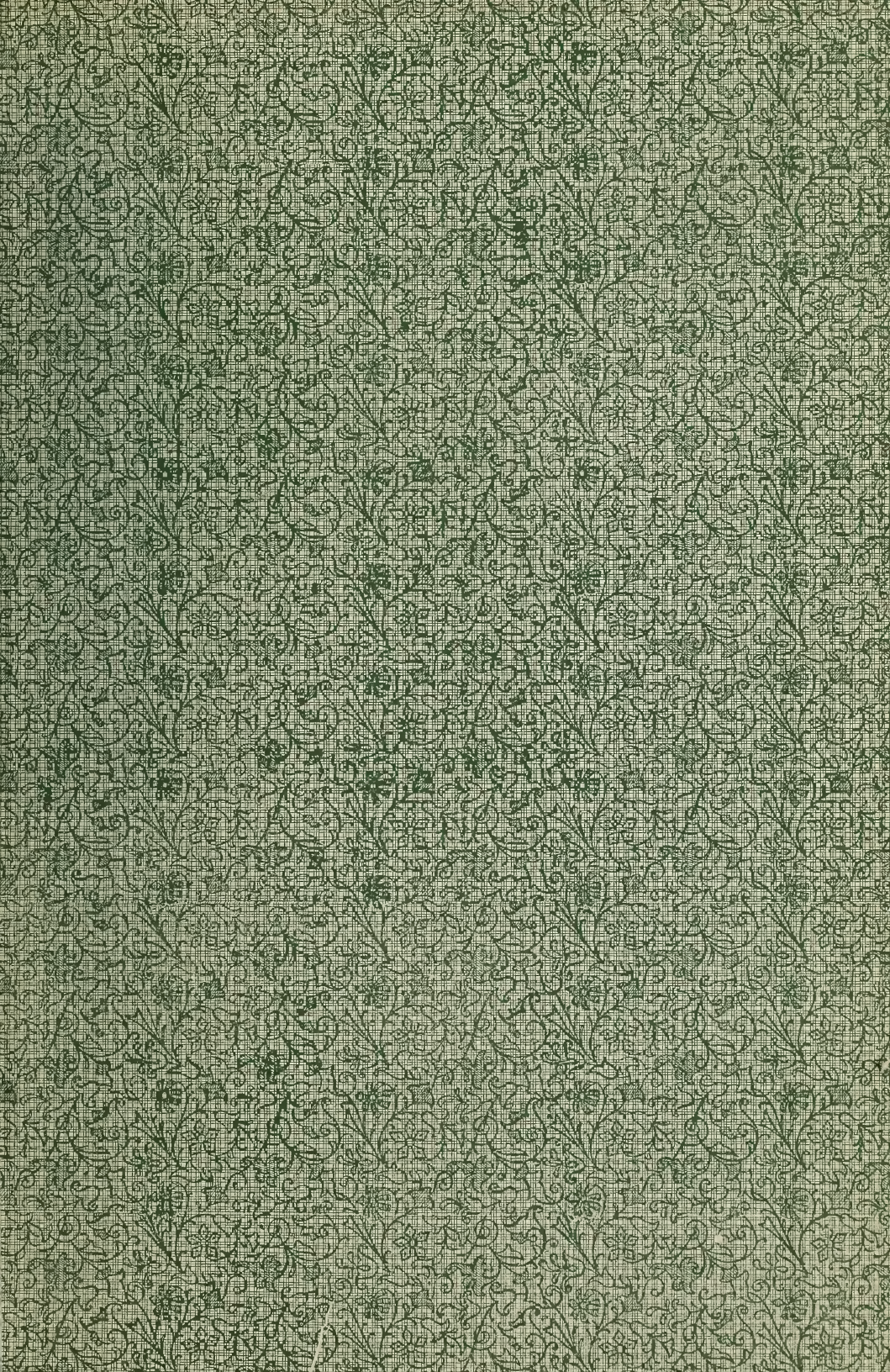
Prof. Wilmore—The Steam Engine as a Factor in Civilization.

Dr. Cary—Psychology of Domestic Animals.

CALENDAR, 1895-96.

Session begins.....	Wednesday, Sept. 11, 1895
Examination for admission.....	Wednesday, Sept. 11, 1895
First term begins....	Wednesday, Sept. 11, 1895
First term ends.....	Friday, Dec. 20, 1895
Second term begins....	Monday, Dec. 30, 1895
Second term ends	Saturday, March 21, 1896
Third term begins	Monday, March 23, 1896
Sophomore class exercises.....	Friday, May 1, 1896
Final examinations begin.....	Wednesday, May 27, 1896
Commencement sermon.....	Sunday, June 7, 1896
Annual meeting of Trustees	Monday, June 8, 1896
Junior class celebration, 10 A. M.	Monday, June 8, 1896
Military exercises, 4 P. M.	Monday, June 8, 1896
Celebration of Literary Societies, 8 P. M....	Monday, June 8, 1896
Alumni day.....	Tuesday, June 9, 1896
Military exercises, 5 P. M.....	Tuesday, June 9, 1896
Address before Literary Societies, 8 P. M....	Tuesday, June 9, 1896
Commencement day.....	Wednesday, June 10, 1896





UNIVERSITY OF ILLINOIS-URBANA



3 0112 110837157